MEDICAL CONGRESS — MEDIESE KONGRES, PORT ELIZABETH

21-26 June / Junie 1954

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A METHOD FOR THE REPAIR OF HERNIA

J. R. FRYLINCK, F.R.C.S. (ENG.), F.R.C.S. (EDIN.)

Department of Surgery, University of the Witwatersrand

The problem of the management of hernias seems to be still with us—and that in spite of the fact that it is one of the commonest conditions with which we have to deal and have had to deal since surgery began. A fairly recent review of the results indicates that the average rate of recurrence is in the region of 12%, no matter what method of repair is used (Edwards,[3] 1951). This figure is perhaps better impressed on one when one realizes, as Edwards says, that 'there are .... two failures after every 17 operations.'

When operation sites for recurrent hernias are re-exposed it appears that whatever the method used in the previous operation—Bassini or modifications, Bloodgood flaps, fascial and floss-silk etc. darns—there will be one certain finding, viz. a layer of fibrous tissue forming the posterior wall of the canal. In certain places defects in this fibrous sheet are found and it is through these defects that the sac or sacs emerge. In other words, the methods used in repair have failed to produce a strong enough or even enough fibrous sheet, and it seems that one's aim should be to ensure that, in some way or another, fibrous tissue formation is stimulated.

In the course of the last few years I have had to reopen two wounds in which stainless-steel mesh had been used for the repair of large ventral hernias. In the first case this was in order to remove the mesh, i.e. the foreign material, because the wound continuously suppurated and the mesh was thought to be the agent responsible. It was found that the mesh was enclosed in an extremely dense fibrous sheet from which it was quite impossible to extricate it. In fact, so dense was this layer of fibrous tissue that it was difficult even to find the mesh. The second case required a laparotomy for the removal of a stone which had been left in the common bile duct at a previous cholecystectomy. Sepsis in the wound following the primary cholecystectomy had caused a large ventral hernia and this had been repaired by means of a stainless steel mesh. It was not my object in this case to remove the mesh and an incision was simply made through it to enter the abdomen. Again I was impressed with the dense tough nature of the fibrous sheet enclosing the mesh. It was perhaps ¼-½ inch thick and cut almost like cartilage. These cases indicate that stainless steel mesh may well be of value in the repair of hernias.

The mesh also possesses another property, viz., that by this method no tension is produced on any structure and thereby one of the fundamental principles of hernia repair is fulfilled. The mesh can be cut to any size that may be required. Relaxing incisions in the anterior rectus sheath are thereby avoided and so there is no tendency for the nasty bulge one sometimes sees after the anterior rectus sheath is cut or fashioned into a flap.

There are, of course, certain rules in hernia work which the use of the mesh does nothing to negate. For example, the sac must be found and completely removed. Additional sacs should be looked for and dealt with. A stretched internal ring should be narrowed by sutures which approximate the pillars to fit snugly round the cord.

What then are the objections to the use of mesh? From the patient's point of view there is none. It matters not at all to him what method is used provided the method is successful. He is quite unconscious of the foreign body that has been introduced into his abdominal wall. It is perhaps wise, however, that he should not be told about it, lest his attention be unduly focussed on the area. The mesh has the advantage over our old stand-by method—the Gallie fascial graft—that there is no residual bulge of the lateral thigh muscles, to which some patients, at any rate, do not take kindly. The large needle is not used and the sheet of mesh allows of no small apertures through which recurrent sacs may come. When using fascia it always seems to me that I have not enough material. As I have mentioned before, the mesh can be cut to any size.

Individual surgical opinion dies hard. Of course the surgeon who has found one method to be successful would be foolish to desert it for another; but it is strange how low the rate of recurrence seems to be in general surgical discussion. The main objection appears to be that the introduction of a foreign material may cause sepsis. This is, in fact, not so. Post-operative sepsis is not produced by the introduction of the gauze *per se*. Faulty technique and inadequate sterilization of instru-

ments and materials are the primary causes. Possibly length of exposure at operation is an etiological factor in infection (Beekman and Sullivan [1]) and this the use of gauze minimises, for the method is an easy one and takes less time than most methods, particularly the fascial graft of Gallie. If sepsis supervenes it is of course a disadvantage to have used unabsorbable material, but several cases in which this has occurred have eventually cleared up by conservative treatment of the infected area, leaving the hernia well and truly repaired. Should sepsis supervene the use of gauze does not lead to the annoying sequel seen in those patients on whom floss-silk or even ordinary silk have been used, viz. the periodic formation of discharging sinuses from which small bits of the foreign material are extruded.

THE METHOD

The principle of the method is by no means new. It was described by Phelps in 1894 and by Witzel in 1900. The technique at present employed was described in 1948 by Throckmorton [4] and by Douglas.[2] As pointed out by these writers individual cases will require some modification of technique to suit their particular hernial defect.

The material used on this series is stainless-steel mesh which has 50 x 50 strands of wire (0.003 inch in diameter) to the square inch. The mesh is soft and pliable and yields with the body movements. It is impossible to palpate it subcutaneously when once the skin wound has healed.

My routine has been to treat both indirect and direct inguinal hernias and recurrent inguinal hernias in the same manner. (In ventral hernias the principles remain the same.)

When once the sac has been dealt with the size of the area one wishes to cover is estimated and a piece of gauze is cut allowing sufficient margin for the suturing to take place through strong surrounding structures and for the overlap which is necessary on the gauze itself so that sutures grip a double thickness. The gauze is then sutured to the inguinal ligament starting from the pubic tubercle and working laterally. Sutures can be of stainless steel wire or of fine silk, and should be interrupted. The medial edge of gauze is sutured to the lateral margin of the rectus sheath, and above the gauze is attached to the conjoined tendon and the internal oblique muscle. A slit, about ¾ inch in length, is made in the lateral border of the gauze and into this slit is placed the cord. The gauze is then sutured around the cord fairly tightly and the lateral border is affixed to the internal oblique and transversalis fascia. The cord thus lies superficial to the mesh.

Fig. 1 indicates the state of affairs with the gauze in position. The external oblique is then closed anterior to the cord. Haemostasis is important, for drainage in these cases is not desirable. The drain provides a two-way traffic lane—blood escapes and infection enters. In large scrotal hernias a dead space is left in the scrotal sac and in these it is advisable to drain through the lower end of the scrotum.

In the elderly it is advisable to insist on early ambulation and as there is no tension in the region of the inguinal canal there is little danger of the sutures tearing through.

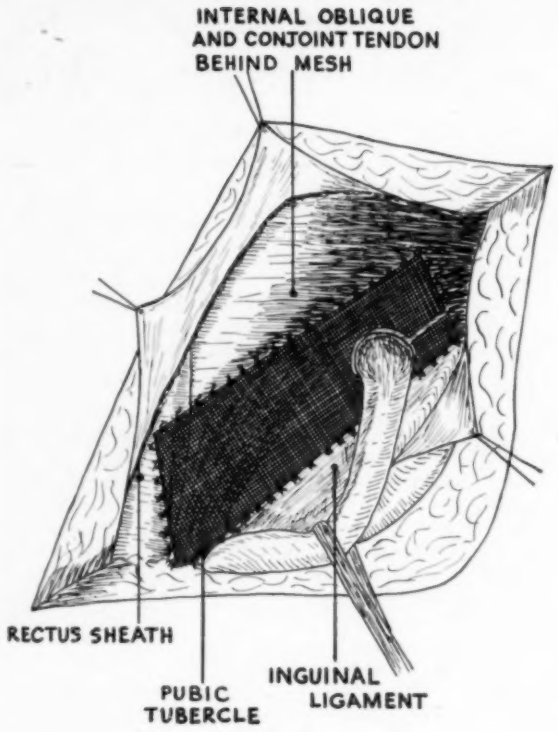

Fig. 1

Twenty-one cases have been treated by this method. The ages of the patients ranged between 31 and 76 and 12 of the 21 were over the age of 50. Four were females with large ventral hernias, 2 of which had been operated on before for the same condition. The rest were males with inguinal hernias of the direct or indirect type and in a few both types were present on the same side.

Two of the patients (both male inguinal) have failed to return for re-examination; but the remaining 19 have been examined repeatedly over the last 18 months and no recurrence has been seen in them.

SUMMARY

A method of hernial repair suitable to nearly all types of hernia is described. The method has been used in 21 cases, and in the 19 that have been followed up there has been no recurrence.

I wish to thank Prof. W. E. Underwood for granting the facilities for the management of these cases. I am indebted also to Mr. J. C. Allan of this Department for the illustration.

REFERENCES

1. Beekman, F. and Sullivan, J. (1939): Surg. Gynec. Obstet., **68**, 238.
2. Douglas, D. M. (1948): Lancet, **1**, 936.
3. Edwards, H. (1951): *British Surgical Practice: Surgical Progress.* London: Butterworth & Co., Ltd.
4. Throckmorton, T. D. (1948): Surgery, **23**, 32.

Suid-Afrikaanse Tydskrif vir Geneeskunde

South African Medical Journal

EDITORIAL

APPOINTMENTS TO BENEFIT SOCIETIES

Once again the attention of members must be drawn to the policy of the Association with regard to appointments to Benefit Societies. The Association has set its face against the appointment of full-time medical officers to Benefit Societies, especially in areas where medical practitioners who could hold part-time appointments are already resident.

On a previous occasion members of the Association had to be warned against submitting applications for full-time appointments, and their attention was drawn to the Federal Council's ethical rule forbidding members to accept or retain any appointment of which the Association does not approve. In this issue an advertisement again appears for full-time appointments to a Benefit Society, to which reference is made in an 'Important Notice' in the advertisement columns.

It is expected that members of the profession will not apply for these posts. To quote from a previous editorial on this matter 'it is necessary for the Association to keep the operations of Benefit Societies under observation and to refuse to countenance any whose methods do not conform with the requirements of the Association. Such action will not be effective unless the Association can rely upon the support of all its members; for its chief weapon must be the refusal of its members to hold appointments in Societies of whose methods the Association disapproves'.

VAN DIE REDAKSIE

AANSTELLINGS TOT SIEKTE-ONDERSTAND-VERENIGINGS

Nog eens moet die aandag van lede gevestig word op die beleid van die Vereniging in verband met aanstellings tot Siekte-onderstandverenigings. Die Vereniging het hom verset teen die aanstelling deur Siekte-onderstand-verenigings van voltydse geneeskundige beamptes, vernaamlik in dele waar geneeshere alreeds woonagtig is en deeltydse aanstellings kan beklee.

By 'n vorige geleentheid alreeds moes lede van die Vereniging gewaarsku word om nie vir 'n voltydse aanstelling aansoek te doen nie. Hul aandag was bepaal by die Federale Raad se etiese reël wat lede verbied om aanstellings wat die Vereniging nie goedkeur nie aan te neem of te behou. In hierdie uitgawe verskyn daar weer 'n advertensie vir voltydse aanstellings by 'n Siekte-onderstandvereniging, waarna verwys word in die advertensiekolomme onder die opskrif ‚Important Notice'.

Dit word verwag van lede van die beroep dat hulle nie om hierdie betrekkings sal aansoek doen nie. Ons haal aan uit 'n vorige inleidingsartikel oor hierdie onderwerp ‚dit is nodig dat die Vereniging 'n wakende oog oor die werksaamhede van sulke verenigings hou, en weier om enige een wie se metodes nie aan die standaarde van die Vereniging voldoen nie, goed te keur. Sodanige optrede sal nie doeltreffend wees nie, tensy die Vereniging op die ondersteuning van al sy lede kan staatmaak; want sy vernaamste wapen moet die weiering van sy lede wees om aanstellings te beklee by Onderstandsverenigings wie se metodes deur die Vereniging afgekeur word.'

BRUCELLOSIS

Brucellosis is primarily a veterinary disease, and cases of human infection can always be traced to an animal source. There is no evidence to show that man can transmit the disease save by mechanical means, e.g. by footwear or clothing soiled with manure, etc. Contact with infected animals is far more likely to produce the disease than the ingestion of infected animal products. In the country therefore infection results more from handling the infected animal than from drinking its milk or eating its meat; but in the cities—where the incidence of brucellosis is relatively lower—the portal of entry in man is nearly always the alimentary tract.

In practice brucellosis is said to be the only disease—apart from tuberculosis—in which the sick person can lead a reasonably normal life despite a raised temperature. The symptomatology is bizarre, and is best grouped under two headings: (*a*) acute fever of limited duration followed by apparent recovery, and (*b*) long-continued disease with periodic exacerbations. The type of infection has no bearing on the picture, but *Br. melitensis* is more virulent to man than either *Br. suis* or *Br. abortus*, and outbreaks of *Br. melitensis* infection hardly ever occur, it is said, without some human case being reported. Since it is this type which carries the highest mortality rate, it is the most important one from the point of view of man's health.

The final diagnosis of brucellosis rests upon demonstration of circulating antibodies in a satisfactory titre, and

if possible a positive culture from the blood or lymph-glands. The importance of examining the limb joints and the vertebral column is emphasized by the higher morbidity associated with bone and joint involvement in *Br. melitensis* infections.

In the majority of cases brucellosis is a self-limiting disease if untreated, and this fact should be borne in mind when treatment is undertaken. Despite the subjective well-being, bed rest and attention to diet are important points, the latter particularly with antibiotic therapy, where it may be advisable to administer vitamin supplements to prevent a distressing antibiotic avitaminosis. While penicillin is completely inactive, both aureomycin, 2g. daily for 2-3 weeks, and oxytetracycline (terramycin—Pfizer), same dosage and course, have proved their value. Chloramphenical (chloromycetin—Parke Davis) is probably as useful, but on account of the danger of serious aplastic anaemia following its administration,[2] it is best avoided here. The best results have been achieved with a combination of either aureomycin or oxytetracycline, and streptomycin, 1-2g. daily for 2-3 weeks. Another combination that appears to be promising is that of small doses of cortisone (500 mg. in 2 days) with the antibiotics.

The place of antigen therapy in brucellosis is still in dispute, mainly because of the ill-defined bacteriological qualities of the strains used. It should never be undertaken without prior bacteriological proof of the disease.

REFERENCES

1. Renoux, G. E. (1953): *Advances in the Control of Zoonoses*, World Health Organization Monograph Series, Geneva.
2. Editorial Warning on Antibiotics, S. Afr. Med. J. (1954), **28**, 332.

MEDICAL AID SOCIETIES APPROVED

OFFICIAL ANNOUNCEMENT

The following new Medical Aid Societies were approved by Federal Council at its meeting held in Johannesburg on 29 April—1 May 1954:

1. Atlantic Refining Company Medical Aid Society, P.O. Box 664, Cape Town.
2. Cape Times Medical Aid Society, P.O. Box 11, Cape Town.
3. Norwich Union Life Insurance Society, Staff Medical and Surgical Benefit Scheme, P.O. Box 1226, Cape Town.
4. S.A. Association of Municipal Employees (S.A.A.M.E.) Medical Aid Fund, P.O. Box 9796, Johannesburg.
5. S.A.K.A.V. Sick Benefit Fund, P.O. Box 33, Paarl.
6. S.A. Mutual Life Assurance Society Staff Medical Aid Fund, P.O. Box 66, Cape Town.

L. M. Marchand
Associate Secretary

Medical House
35 Wale Street
Cape Town

AMPTELIKE AANKONDIGING

Op sy vergadering van 29 April—1 Mei 1954 te Johannesburg gehou het die Federale Raad onderstaande nuwe Mediese Hulpverenigings goedgekeur:

7. S.A. Teachers' Association Medical Aid Society, 12 Bellevue Road, Sea Point.
8. United Banks' Medical Aid Society, P.O. Box 1242, Cape Town.
9. J. H. Vivian & Co., Ltd., Medical Aid Society, P.O. Box 301, Johannesburg.
10. Village Board of Management of Welkom Medical Aid Society, P.O. Box 708, Welkom, O.F.S.
11. Yorkshire Medical Aid Fund, P.O. Box 2755, Johannesburg.

L. M. Marchand
Medesekretaris

Mediese Huis
Waalstraat,
Kaapstad

PASSING EVENTS - IN DIE VERBYGAAN

MEETING OF ASSOCIATION OF PHYSICIANS

The Annual Meeting of the Association of Physicians of South Africa will take place on Friday, 25 June, at 3.30 p.m., in Room 2 at the Shirley Cribb Nursing College, Port Elizabeth. Resolutions for submission to the meeting should be in the hands of the hon. secretary/treasurer T. Schneider, Medical House, 5 Esselen Street, Johannesburg, by Friday, 4 June. Members are cordially invited to attend.

RAILWAY MEDICAL OFFICERS GROUP ANNUAL GENERAL MEETING

The Annual general meeting of the R.M.O. Group, will be held on Wednesday 23 June at 10 a.m. at the Shirley Cribb Nursing College, Park Drive, Port Elizabeth.

By die jongste promosieplegtigheid van die Universiteit van Pretoria gehou op 10 April 1954 in die teenwoordigheid van die Kanselier, adv. C. te Water, is aan dr. Izak Stephanus de Wet, die graad van Magister in Snykunde (M.Ch.) en aan dr. Theunis Fichardt, die graad van Magister in Geneeskunde (M.Med. met lof.) toegeken.

S.A. MEDIESE KONGRES 21-26 JUNIE 1954 PORT ELIZABETH

Die aandag van lede word daarop gevestig dat, indien hulle van plan is om die Suid-Afrikaanse Mediese Kongres by te woon wat van 21 tot 26 Junie 1954 te Port Elizabeth gehou sal word, hulle die intensiekaartjies, wat onlangs aan hulle gestuur was, so gou moontlik moet voltooi en aan die Organiserende Sekretaris, Suid-Afrikaanse Mediese Kongres 1954, Posbus 1137, Port Elizabeth, terugstuur.

Dr. G. Spence Smyth has resumed practice as a Specialist in Obstetrics and Gynaecology at 64 Moray House, Jeppe Street, Johannesburg.

UNION DEPARTMENT OF HEALTH BULLETIN

Report for the 7 days ended 29 April.

Plague, Smallpox: Nil.

Typhus Fever. Natal: The diagnosis of the Native case in the Empangeni district, notified in Bulletin No. 15 of 14 April 1954 has now been confirmed by laboratory tests.

One (1) Native case near Nqabeni in the Alfred district. Diagnosis confirmed by laboratory tests.

Cape Province: No further cases have been reported from the Stutterheim municipal area since the notification in Bulletin No. 13 of 1 April 1954. This area is now regarded as free from infection.

Epidemic Disease in other Countries.

Plague: Nil.

Cholera in Chalna, Chittagong, Dacca (Pakistan); Calcutta (India).

Smallpox in Mogadiscio (Somalia); Karachi, Dacca (Pakistan); Bombay, Calcutta, Cochin, Delhi, Jodhpur, Kanpur, Madras, Nagapattinam (India); Haiphong, Hanoi, Hué, Saigon-Cholon (Viet-Nam).

Typhus Fever in Cairo (Egypt).

PRIMÊRE OF DIREKTE PIGMENTASIE VAN DIE HUID AS GEVOLG VAN SONLIG IN SUID-AFRIKA

R. KOOIJ, M.D. EN F. P. SCOTT, ARTS

Departement van Interne Geneeskunde, en Afdeling Dermatologie†, Universiteit van Pretoria*

Afgesien van die algemeen bekende huidpigmentasie as gevolg van sonbestraling, wat ontstaan deur 'n voorafgaande eriteem (sekondêre pigmentasie), kom daar nog 'n tweede vorm voor wat bekend is as primêre pigmentasie (*pigment darkening*). Hierdie vorm van pigmentasie is nog nie lank bekend nie. Dit is eers in 1938 deur Hauser [1] ontdek en onafhanklik van haar deur Henschke en Schulze.[2] Miescher en Minder [3] het die primêre pigmentasie ook nader bestudeer en beskryf. Hierdie publikasies het egter min bekendheid verkry. Daar is aangetoon dat primêre pigmentasie in belangrike opsigte van die bekende sekondêre pigmentasie verskil. Waar sekondêre pigmentasie pas enkele dae na sonbestraling optree, vind primêre pigmentasie onmiddellik plaas. Daar is geen voorafgaande eriteem by primêre pigmentasie, soos algemeen die geval is bij sekondêre pigmentasie nie, maar 'n gelyktydige eriteem kom soms voor. 'n Verdere belangrike verskil is, dat verskillende golflengtes verantwoordelik is vir die twee vorms van pigmentasie. Terwyl eriteem met sekondêre pigmentasie opgewerk word deur golflengtes tussen 230 mμ en 320 mμ (kortgolwige ultravioletlig), word primêre pigmentasie veroorsaak deur golflengtes tussen 300 mμ en 460 mμ (langgolwige ultravioletlig). Daar is maar 'n klein gebied tussen 300 mμ en 320 mμ, waar hierdie strale gedeeltelik saamval.

Vir die opwekking van primêre pigmentasie is baie meer stralende energie (*radiant energy*) nodig as vir sekondêre pigmentasie. Die bogemelde ondersoekers het hoofsaaklik met kunslig gewerk. Hulle het 'n kwiksilwerlamp (*Quecksilber Kapillar Strahler*) onder hoë druk en spesiale filters wat alleen strale bo 320 mμ deurlaat, gebruik. Primêre pigmentasie tree die sterkste tevoorskyn in 'n huid wat tevore bruin gebrand is. By sekondêre pigmentasie is die omgekeerde die geval. In die afwesigheid van suurstof vind geen primêre pigmentasie plaas nie, terwyl die ontstaan van sekondêre pigmentasie hierdeur nie beïnvloed word nie.

Hamperl, Henschke en Schulze [4] kon by histologiese ondersoek 'n geringe verskil in pigmentgehalte tussen bestraalde en onbestraalde vel vind. Hierdie geringe verskil is ook deur Miescher en Minder [3] waargeneem. Hulle beweer dat die ontwikkeling van primêre pigmentasie verskillend is van dié van sekondêre pigmentasie. Hier vind geen nuwe pigmentvorming plaas nie, maar vermoedelik 'n oksidasie van reeds bestaande leukomelanien. Die proses is omkeerbaar.

Die ondersoeke van primêre pigmentasie is met uitsondering van een enkel geval altyd by blankes verrig. Dit tree die maklikste op by donker tipes (brunette), maar vind ook by ligtere persone plaas. Daar bestaan groot individuele verskille. Die een keer wat dit by 'n neger beskryf is, is baie min primêre pigmentasie waargeneem (Miescher and Minder [3]).

* Hoof, Professor dr. H. W. Snyman. † Hoof, Dr. J. Marshall.

EIE WAARNEMINGS

Tydens eksperimente oor die ligoorgevoeligheid by 'n kleurlingvrou wat aan chroniese porferie gely het, het ons 'n donker verkleuring van die vel na 20 minute bestraling met direkte sonlig waargeneem. Dit kon nie met glasdruk verwyder word nie—die verkleuring was dus nie deur eriteem veroorsaak nie. Aanvanklik het ons gemeen dat dit 'n verskynsel van porferie mag wees, maar later is gevind dat dit 'n algemeene verskynsel is by gekleurde rasse in Suid-Afrika (sien Fig. 1).

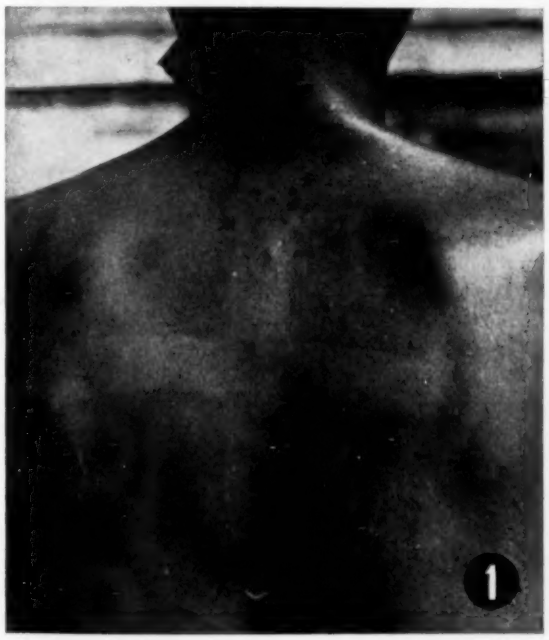

Fig. 1. Primêre pigmentasie op rug van 'n Bantoe na 15 minute sonbestraling.

Ons het hierdie verskynsel by meer dan honderd naturelle en kleurlinge van beide geslagte, waaronder klein kinders, volwassenes en ou persone, sonder uitsondering opgewek. Die onmiddellike verdonkering van die vel van gekleurde rasse na blootstelling aan son moet dus as 'n algemene verskynsel aanvaar word.

Die kleurvervandering is meestal 10 minute na blootstelling duidelik sigbaar en bereik 'n maksimum na ongeveer 30 minute.

TABEL I. TRANSMISSIE VAN GEBRUIKTE FILTER;

Filters	*Golflengte in mμ*
1. Woods-filter	310-400
2. Gewone glas	330-2,500
3. Ilford No. 621	370-515
4. Ilford No. 623	460-545
5. Ilford No. 624	495-575
6. Ilford No. 625	510-590

Studiemetodes. Vir die bepaling van die golflengtes waarby die verskynsel optree het ons gebruik gemaak van (*a*) 'n Woods-filter, (*b*) gewone glas (voorwerpglasies), (*c*) 'n reeks Ilford-filters. Hierdie filters met hulle golflengtes is in Tabel I aangedui. Fig. 2 toon die deurlaatkurwes van Ilford-filter No. 621, die filter waardeur die primêre pigmentasie die beste plaasgevind het, asook die kurwes van Ilford-filter No. 623 en Woods-filter. Tabel II dui die sterkte van pigmentasie by twintig Bantoes aan soos waargeneem na 20 minute bestraling van die rughuid deur verskillende filters. (Januarie 1954.)

Die ondersoek is hoofsaaklik op Bantoes toegespits. By 20 blankes is in ongeveer 'n derde van die gevalle die verskynsel van primêre pigmentasie waargeneem met direkte sonbestraling. Drie albino Bantoes wat met sonlig bestraal was het alleen eriteem vertoon ongeveer 2 uur na die bestraling, maar geen pigmentasie nie.

In die meeste gevalle was die verskynsel na ongeveer 'n uur alreeds minder duidelik en na 24 uur was dit byna nie meer sigbaar nie. By verskeie persone egter, waaronder 3 lydende aan chroniese porferie, was die pigmentasie van langer duur en na weke nog duidelik sigbaar. By 'n vierde pasient egter met chroniese porferie het die verskynsel, alhoewel dit gou ontstaan het, binne 24 uur weer totaal verdwyn.

By bestraling van die huid sonder filters of glas het ons alleen sporadies eriteem, wat onmiddellik saam met die pigmentasie ontstaan het, waargeneem. Waar

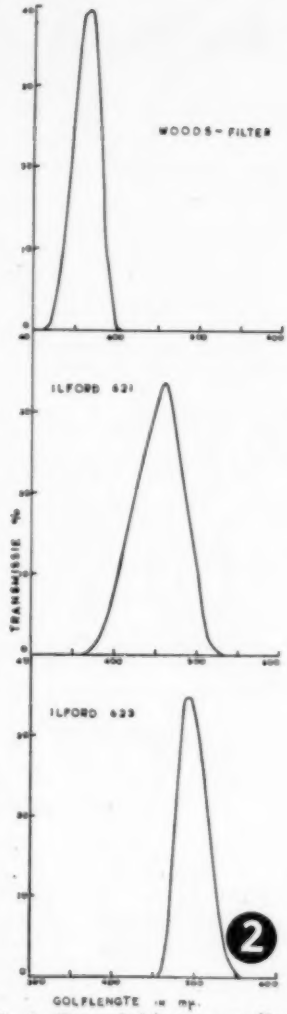

Fig. 2. Transmissiekurwes van filters.

TABEL II. GRAAD VAN PIGMENTASIE BY 20 BANTOES NA 20 MINUTE SONBESTRALING

No.	*Onbedek*	*Glas*	*Woods-filter*	*No. 621*	*No. 623*	*No. 624*	*No. 625*	*Bygaande eriteem*
1.	++	++	±	+	±	±	±	—
2.	+++	+++	+	++	—	—	—	623, 624
3.	+++	+++	+	++	—	—	—	—
4.	+++	+++	+	++	±	—	—	623, 624
5.	+++	+++	++	+	+	—	—	—
6.	+++	+++	+	+++	+++	±	—	625
7.	++	++	±	++	+	—	—	—
8.	+	+	—	+	+	—	—	624, 625
9.	+++	+++	+	+	++	+	—	625
10.	+++	+++	+	+++	+++	—	—	—
11.	+	+	—	—	—	—	—	orals
12.	+++	+++	+	++	++	—	—	—
13.	+++	+++	++	++	++	±	±	—
14.	+++	+++	++	++	±	—	—	—
15.	+++	+++	+	+	±	—	—	—
16.	++	++	±	+	±	—	—	—
17.	++	++	±	+	—	—	—	621, 623, 624, 625
18.	+	+	±	+	—	—	—	621, 623, 624, 625
19.	+++	+++	±	++	++	—	—	625
20.	++	++	+	++	+	—	—	623, 624, 625

glas of filters gebruik was, het die eriteem egter dikwels verskyn. Hierdie eriteem berus waarskynlik op 'n plaaslike vatverwyding deur hitte en is heeltemal onafhanklik van die eriteem wat deur kortgolwige ultravioletbestraling voorkom en eers enkele ure later optree. Dit tree altyd gelyktydig met die pigmentasie op en verdwyn weer binne 'n kort tydperk.

Hierdie tipe reaksies van gekleurde rasse is, sover ons bekend, nog nie eerder beskryf nie. Dit is gemaklik op te wek en, altans in Pretoria, 'n algemene verskynsel. Soos hierbo vermeld het dit prakties nie opgetree by die neger wat deur Miescher en Minder [3] beskryf is nie.

By herhaling van die bestraling op dieselfde huidgedeelte kon ons geen intensiewer pigmentasie kry as op die tevore nie bestraalde huid nie.

Bestraling tydens die somermaande het in 'n groter aantal gevalle 'n bygaande eriteem (hitte eriteem) vertoon as wat die geval was in die wintermaande. Eriteem veroorsaak deur kortgolwige ultravioletstrale en wat later optree en die sekondêre pigmentasie voorafgaan, is nooit tydens ons proewe by naturelle of kleurlinge waargeneem nie. Op koue winderige dae het die onmiddellike pigmentasie stadiger en minder intensief opgetree. Onder glas was die pigmentasie soms duideliker as op onbedekte dele. Dit berus waarskynlik op die feit, dat die huid warmer geword het onder die glas en dus die pigmentasie bevorder het.

By donkergekleurde Bantoes vind soms 'n baie sterk en soms alleen 'n swak pigmentasie plaas. Dieselfde verskille is by ligter gekleurde persone gevind. Daar bestaan dus ook hier groot individuele verskille.

Fig. 3. Mikrofoto van rughuid, onbestraalde gedeelte.

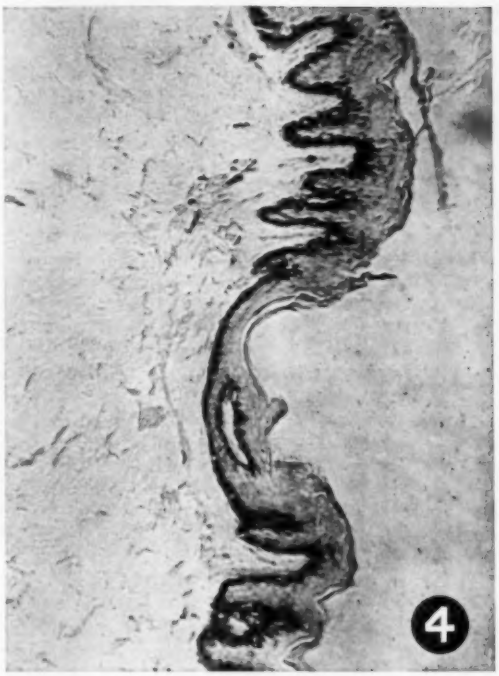

Fig. 4. Mikrofoto van dieselfde snit as hierbo, maar bestraalde gedeelte.

Deur die bestraalde deel met sterk glasdruk anemies te maak is 'n duidelike vermindering van premêre pigmentasie waar te neem.

Primêre pigmentasie vind 8 uur in die oggend reeds maklik plaas en is tot 5 uur in die namiddag nog op te wek, sowel in die somer as in die winter.

By histologiese ondersoek het ons gebruik gemaak van ongekleurde preparate, Hematoksilien-Eosien-kleuring, silwer impregnasie (volgens Lignac [5]) en Dopakleuring. Weefsel in paraffien ingebed sowel as vriessnitte met en sonder formaline-fiksasie is gebruik. Die biopsies is altyd onmiddellik na bestraling geneem. 'n Vermeerdering van pigment in die basale laag van die huid is waar te neem in die bestraalde dele. Die verskil was nie altyd baie duidelik nie, soos ook deur bogemelde ondersoekers gevind. Die duidelikste egter was dit altyd in ongekleurde preparate (Fig. 3 en 4). In 'n onlangse ondersoek van Gates & Zimmermann [6] oor die verskil in huidskleur by gekleurde persone het hulle dieselfde waarneming gemaak.

KOMMENTAAR EN GEVOLGTREKKINGS

Die onmiddellike verdonkering van die huid van gekleurde rasse vind plaas deur filters wat alleen langgolwige ultravioletstrale deurlaat. Dit is die maklikste deur glas, wat alleen strale bo 330 mμ deurlaat, waar te neem. Die transmissie van die Woods en ander filters is slegs 40% en die pigmentasie deur hierdie filters is dus heelwat minder. Behalwe die glas dus is die beste

pigmentasie waargeneem deur Ilford-filter No. 621 (370-510 mμ). Ook met Woods-filter en Ilford-filters No. 623 is direkte pigmentasie opgewek.

Filters wat strale onderkant ongeveer 500 mμ afsny gee egter geen primêre pigmentasie nie. Hierdie bevindings kom ooreen met opgawes in die literatuur gemaak, naamlik dat die primêre pigmentasie ontstaan deur strale tussen 300 mμ en 460 mμ. Daar ons egter ook soms pigmentasie gevind het met Ilford-filter No. 623 wat strale bo 460 mμ deurlaat is dit waarskynlik, dat die boonste grens nog iets hoër is as 460 mμ. Met 'n groter aantal filters van verskillende golflengtes sou dit moontlik wees om hierdie grense noukeuriger te bepaal.

Alhoewel ons geen bewys kon lewer dat ons hier te doen het met 'n oksidasie van leukomelanien soos deur Miescher en Minder [3] beweer nie, pleit die vinnige omkeerbaarheid van die reaksie daar sterk voor.

Die gemaklikheid waarmee primêre pigmentasie by Bantoes in Pretoria met sonbestraling op te wek is, moet toegeskryf word aan die rykheid van ultravioletstrale van ons sonlig soos aangetoon deur Osborne [7] en Richards.[8] Ongelukkig kon hulle geen duidelike onderskeid maak tussen kort- en langgolwige ultravioletstrale nie.

OPSOMMING

Die verskille tussen die algemeen bekende velpigmentasie as gevolg van sonlig, wat na 'n voorafgaande eriteem (*suntan*, sekondêre pigmentasie) ontstaan en die min bekende primêre pigmentasie (*pigment darkening*), wat onmiddellik na die bestraling waar te neem is, word beskryf.

Daar word aangetoon dat hierdie primêre pigmentasie baie maklik by gekleurde rasse in Pretoria opgewek kan word. Hierdie tipe reaksie van gekleurde rasse as gevolg van sonbestraling is nog nie tevore beskryf nie. Die golflengtes waarby hierdie pigmentasie plaasvind, lê ongeveer tussen 300 mμ en 460 mμ (langgolwige ultravioletlig), terwyl die golflengtes wat vir die sekondêre pigmentasie verantwoordelik is tussen 230 mμ en 320 mμ (kortgolwige ultravioletlig) lê.

Histologies kan 'n vermeerdering van pigment in die basale laag waargeneem word in die deel van die huid waar primêre pigmentasie opgetree het. Hierdie pigment is vermoedelik 'n oksidasie produk van leukomelanien.

SUMMARY

The differences between the well-known skin pigmentation caused by sunlight, which occurs after a preliminary erythema (sun-tan, secondary pigmentation) and the less familiar primary pigmentation, which can be observed *immediately* after exposure to sunshine ('pigment darkening') are described.

It has been demonstrated that primary pigmentation can easily be produced in the coloured races in Pretoria. This type of reaction caused by sunlight in coloured races has not hitherto been described. The wave-lengths producing primary pigmentation lie, roughly, between 300 mμ and 460 mμ (long-wave ultra-violet light), while those responsible for secondary pigmentation lie between 230 mμ and 320 mμ (short-wave ultra-violet light).

Histological examination shows that in cases of primary pigmentation there is an increase of pigment in the basal layer of the epidermis. This pigment is presumably an oxidation product of leucomelanin.

Ons wens Dr. E. J. Marais van die W.N.N.R. hartelik te bedank vir sy hulp met die filters.

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FATAL VENOUS AIR EMBOLISM: AN INTRAVENOUS TRANSFUSION ACCIDENT

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Venous air-embolism is a rare but potentially fatal complication of any surgical procedure in which veins are exposed to the positive pressure of the atmospheric air. Thus, operation near, or stab-wounds into, the great veins of the neck and axillae, criminally-induced abortions, and the diagnostic and therapeutic procedures which involve the injection of air into a body cavity, may result in sudden death by this mechanism. A common hospital procedure fraught with this potential danger is that form of intravenous transfusion therapy where the fluid is pumped into the circulation under pressure.

CASE REPORT

A. B. C., an adult male, was admitted to hospital with bilateral renal calculi on 18 March 1953. Stones were first removed by nephrolithotomy of the right kidney, and then, at 8 a.m. on 24 April, of the left kidney. The patient recovered from the anaesthetic and was doing well, until 4 p.m., when he suddenly collapsed. Resuscitative measures were instituted and he recovered sufficiently to speak to his wife and the surgeon. Blood transfusion, applied under positive pressure by means of a sphygmomanometer bulb, continued. At

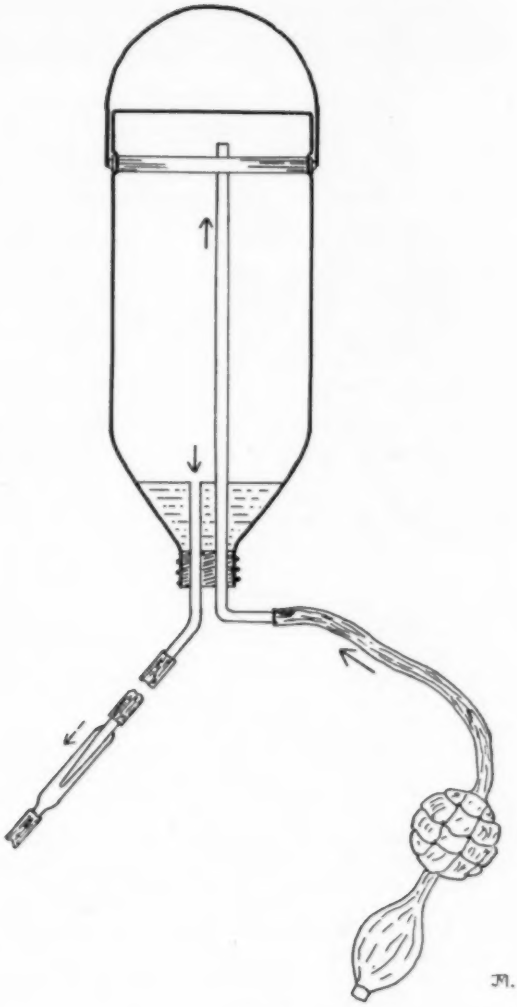

FIG. 1

approximately 5.40 p.m., while someone was in attendance at the bedside and while another bottle of blood was being prepared for transfusion, the patient suddenly collapsed, exclaimed, 'Oh, my God, my head!' and died. The blood, which was still being administered under pressure, had sunk to a low level in the bottle and lay flush with the end of the outlet tube (see Fig. 1). Post-mortem examination was performed about 17 hours after death, the body having been constantly refrigerated in the meantime.

AUTOPSY FINDINGS

The body was that of a well-developed and well-nourished male approaching middle age. Weight about 200 lb. Height 5 ft. 8 in. Rigor mortis was generalized, and well-marked post-mortem lividity was present over the dorsal aspect of the body. There were no signs of putrefaction visible. An old mid-line surgical scar was present over the abdomen and an 11-inch diagonal healing incision across the right loin. A fresh incision across the left loin 10 inches long was secured with interrupted catgut sutures. There were puncture-marks present in both cubital fossae, with coagulated blood surrounding the wound on the left side.

The cranial cavity was opened first with the electric saw, care being taken not to injure the dura mater. After the latter had been reflected, the cerebral vessels over the vertices and at the base of the brain were seen to be broken up by numerous gas bubbles of varying size. On section of the brain no other abnormality was detected.

The thoracic cavity was next opened and the superficial tissues of the neck dissected, care being taken not to damage the circulatory trunks. Large gas bubbles were observed in the external jugular veins, that on the right side extending for about 1½ in. along the course of the vessel. Next the internal jugular veins were opened *in situ*, and found to contain frothy dark blood in their length to the base of the brain. Taking care to disturb the organs as little as possible, the pericardium was next incised, and the space filled with water: the heart was demonstrated to float. An incision was then made into the right ventricle, which was found to contain frothy blood. The incision was carried up into the pulmonary artery and its branches: the froth could be traced along the course of the vessels towards the hila of the lungs. It was also present in the right auricle, the superior vena cava and the right and left innominate veins, and a fine froth was detected in the left axillary vein. The basilic vein proximal to the puncture-wound was collapsed save for a thin film of blood.

The left auricle and ventricle contained a small amount of blood, which showed no frothing, nor was this present in the aorta or the arterial vessels of the neck. There was no patency between the left and right sides of the heart.

The right kidney was embedded in dense fibrous adhesions and a pea-sized calculus was present in a calyx at the superior pole, with a collection of pus behind it in the kidney substance. A massive retroperitoneal peri-renal haematoma was present on the left side, almost filling the left para-colic gutter. Interrupted sutures on the convex border of the kidney secured a recently-incised wound into the grossly distorted kidney substance. The bladder contained blood-stained urine. The appendix was absent.

No other pathological changes were observed.

Diagnosis. While the large peri-renal haematoma may have contributed to the clinical deterioration of the patient's condition, the cause of his death was attributed to venous air embolism.

DISCUSSION

Fatalities occurring as a result of venous air-embolism following intravenous transfusion under positive pressure have been recorded in the literature. Simpson

reported one case that died suddenly while receiving a saline transfusion, when the level of the fluid in the bottle sank to the level of the outlet tube.[1] Another fatality was recorded among the 300 cases seen by Grant and Reeve with their war-time shock unit.[2] The Medico-Legal Problems Committee of the American Medical Association reported 'a number of deaths' following an investigation.[3]

The identical mechanism of death operates in those cases of criminal abortion where a soapy fluid mixed with air is injected into the uterine cavity under pressure. The maternal venous sinuses may be torn as the placenta is mechanically stripped from the uterine wall by the fluid, and air forced into the maternal circulation. Deaths from air embolism following peri-renal,[4] vaginal,[5] bladder [6] and Fallopian-tube [7] insufflation for diagnostic and therapeutic purposes have also been reported.

The factor common to all these cases is the introduction of a substantial *single volume* of air into the venous circulation *under positive pressure* (i.e. a pressure greater than that of atmospheric air). The literature is so well salted with equivocal cases of fatal 'air embolism' that it would probably be as well to apply these two points as absolute criteria for the diagnosis of the condition. The pressure factor would appear to be essential (with one exception); otherwise the vein, through the elasticity of its walls, would collapse and seal off the circulation from the atmosphere. The exception is that type of vein which is held open by the surrounding soft tissues or bone, e.g. the great veins of the neck, the dural sinuses and the cervical spinal veins, none of which readily collapse when exposed.

Beyond this well-defined group of cases lies a mass of indefinite or doubtful material reported in the literature. One is entitled to be sceptical, for instance, over the likelihood of death by venous air-embolism from a leaking rubber connection in a normally-flowing saline transfusion—a case of 'slow air embolism over 4 hours'; or following the passage of an aneurysm needle through instead of behind the ankle vein in a cut-down; or during the manipulation of a cannula in a collapsed (*sic*) median basilic vein.

For the diagnosis to be unassailable, 3 other conditions must be fulfilled: firstly, death must be rapid, that is, within minutes. On the best experimental evidence available [8, 9] 'slow air embolism' is a nebulous concept; the patient either dies rapidly from the mechanical block to the circulation between the right ventricle and the pulmonary outflow, or he recovers.

Secondly, the autopsy technique must be nothing less than fastidious. The circulation should be preserved as intact as possible, and it would probably be wiser—if the condition is at all anticipated—to commence the examination by dissecting the neck tissues and exposing the great vessels and the heart. While most forensic authors cite the presence of the gas bubbles in the pial vessels over the cerebral hemispheres as a characteristic finding, these are frequently the result of faulty technique in laying aside the dura mater and their appearance may well be simulated by phenomena occurring after death. Moreover, prior removal of the brain exposes the origins of the internal jugular veins to the atmosphere, and the entry of air cannot be readily prevented in the subsequent manipulation of dissection.[1]

While the text-books customarily warn against 'missing the diagnosis', the greater error is probably to over-anticipate it. With reasonable foresight and perspicacity, the pathologist will seldom fail to recognize the peculiar distribution of gas in the venous circulation, while it must be emphasized that columns of bubbles in the great veins of the neck are the rule rather than the exception in slovenly dissections, and casual removal of the heart will inevitably produce some degree of frothing of the blood within the chambers.

The final criterion for the diagnosis concerns the length of the post-mortem interval. Gas-producing organisms (principally *Cl. welchii*) have been isolated from the blood-stream as early as 5 hours after death, but all growth ceased at temperatures below 10° C.[10] To ensure that his diagnosis will bear cross-examination, the forensic pathologist must therefore satisfy himself that his examination took place within this period or that the body was constantly refrigerated from death to the time when he examined it.

DIAGNOSIS

The presumptive diagnosis of venous air-embolism can be made at autopsy upon the basis of:

(1) the peculiar distribution of the air bubbles in the circulation, according to anatomical principles and depending upon the point of entry of the air;

(2) the absence of putrefactive changes in the body; more specifically, exclusion of the possibility of pockets of putrefactive gas simulating this distribution of air bubbles; and

(3) the absence of an alternative cause of death. Apart, however, from this negative point, positive evidence may be furnished by the clinical mode of dying, particularly its suddenness, associated with evidence of the possibility of a single large volume of air having entered the venous system under pressure.

These criteria will help to banish much of the justifiable scepticism with which this diagnosis is so often received.

It has been claimed that radiological examinations are a useful adjunct to the actual diagnosis, and that they may also prove a guide to the most advantageous method of dissection to be followed.[11]

MEDICO-LEGAL APPLICATION

This case may serve to illustrate the constant danger that exists with the application of a positive pressure to the transfusion apparatus 'to make the drip run faster'. Commenting on this practice, an American Medical Association Committee recently stated:[3] 'Such accidents are inevitable when this method is used, unless a vigilant transfusionist is constantly in attendance and vigilant during the procedure. Since this method is not foolproof, transfusion of blood under positive pressure is to be condemned.

'The transfusionist must bear in mind that air em-

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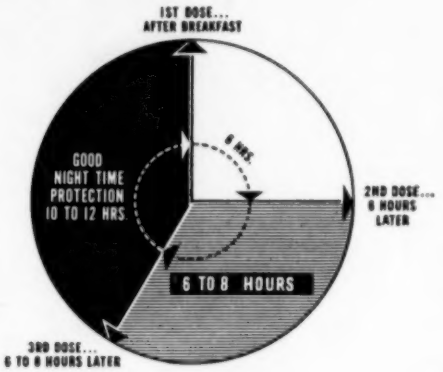

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bolism as the cause of a recipient's death may be considered *prima facie* evidence of negligence'.

SUMMARY

Intravenous alimentation is so common in modern practice that any potentially fatal complication of this procedure is vitally important.

In this paper, a case of fatal venous air-embolism is reported which followed upon an intravenous blood-transfusion under positive pressure.

Criteria for the diagnosis of venous air-embolism are discussed, and reference is made to its medico-legal implication.

Thanks are due to Professor R. Turner of the Department of Medical Jurisprudence, University of Cape Town, for helpful advice, and to the Secretary for Health for the Union of South Africa for permission to publish this paper.

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THE IDENTIFICATION OF FAECAL B. COLI IN WATER AND MILK SUPPLIES

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In his pioneer work MacConkey [1, 2] was the first to identify members of the coliform group by biochemical tests. It was later realized that the members of this group differed among themselves not only in their biochemical properties but also in their natural habitat. The habitat of Bact. coli Type I is in the human and animal intestine whilst other members of the B. coli group occur in soil and in types of vegetation.

Differentiation of typical faecal B. coli (Type I) and other members of the B. coli group by means of fermentation characteristics is somewhat protracted and laborious, and there would be considerable delay in bacteriological reports if this were the only method used.

It was Eijkman [3] who originally observed that coliform bacilli of faecal origin were capable of fermenting glucose with the formation of acid and gas at a temperature of 46° C. Later workers—Levine [4] in the U.S.A. and G. S. Wilson *et al.* [5] in Britain—demonstrated that certain discrepancies in results were due to variations in temperature. They found that for satisfactory results a constant temperature of 44° C was required. MacKenzie *et al.* (1938) advocated this test (44° C) for detecting Bact. coli Type I in water. The test was officially recommended in the Ministry of Health Report No. 71 (1939). Maintenance of the temperature within limits of $\pm 0.5°$ C was essential for correct results.

Before introducing the method as a routine procedure at the South African Institute for Medical Research, 400 samples of water and milk were examined in parallel (*a*) by the modified Eijkman test and (*b*) by planting lactose-fermenting colonies obtained in the Eijkman test on the recognized fermentative media used for differentiating typical faecal B. coli from other members of the coliform group (Roux [6]). The results confirmed that the modified Eijkman test is accurate (2% of cultures differed) and is also valuable as a routine method when large numbers of specimens are examined annually.

More recently MacKenzie *et al.* [7] have demonstrated certain fallacies in the test. They found that Cl. welchii and certain coliform organisms viz. Irregular Type II and Irregular Type VI also fermented lactose at 44° C. The use of Brilliant Green Bile broth instead of MacConkey broth suppressed the growth of Cl. welchii organisms at 44° C and yet in no way influenced the growth of Bact. coli Type I, which in turn, could be distinguished from the two 'irregular' types (II and VI) by the fact that Bact. coli Type I produces indole at 44° C and the 'irregular' types do not.

MacKenzie *et al.* found that Irregular Type II was very rare in human stools (2.6%) and Irregular Type VI even rarer (2 cases in 780 stools examined). This organism has, however, frequently been found in juting material in water mains and in packing material in well pumps; it has been called the 'yarn' organism. It has also been found in decaying wood.

Irregular Type VI is much commoner in India, where it has frequently been isolated from stools, and for this reason the 44° C test is not favoured in that country.

While visiting the Metropolitan Water Board laboratories in London in 1952 one of us (Roux) was impressed by the MacKenzie method in the rapid identification of Bact. coli Type I. It was decided to make parallel tests with MacConkey liquid and Brilliant Green Bile media on all water and milk samples at the Institute, and this was continued for about 14 months.

Method: All positive presumptive B. coli tests developing at 37° C after 24 hours' incubation were sub-cultured onto (*a*) MacConkey liquid medium, and (*b*) Brilliant Green Bile broth medium and peptone water, and these cultures were then transferred to the 44° C bath for 48 hours' incubation, after which results were noted as follows:

1. Acid and gas developing in MacConkey medium

2. Gas production in the Brilliant Green medium together with indole fermentation at 44° C.

According to Topley and Wilson [10] a positive result in MacConkey medium at 44° C is indicative of B. coli Type I, and according to MacKenzie *et al.*[7] gas production in Brilliant Green medium together with indole formation at 44° C is sufficient evidence for the identification of this strain.

Any disagreement in our results were further investigated by plating out onto MacConkey agar medium, and studying individual lactose-fermenting colonies.

The identification of the various coliform organisms was based on the fermentations and reactions given in Table I (Topley and Wilson,[9] with additions) taken in conjunction with Table II from MacKenzie *et al.*[8]

TABLE I. METHODS OF IDENTIFYING B. COLI

Type	*Methyl Red*	*Voges-Prostaner*	*Citrate*	*Indole 37° C*	*McConkey 37° C*	*Gelatin Liquefaction*	*Glycerol*	*Starch*	*McConkey 44° C*	*Indole 44° C*
Bact. coli, type I, faecal	+	−	−	+	+				+	+
Bact. coli, type II	+	−	−	−	−				−	−
Intermediate type I	+	−	+	−	−				−	−
Intermediate type II	+	−	+	+	−				−	−
Bact. aerogenes, type I	−	+	+	−	−	−	AG	AG	−	−
Bact. aerogenes, type II	−	+	+	+	−				−	−
Bact. cloacae	−	+	+	−	−	+	−	−	−	−
Irregular, type I	+	−	−	+	−				−	±
Irregular, type II	+	−	−	−	+				+	−
Irregular, type VI	−	+	+	−	+				+	−

WATER EXAMINATIONS

The results of comparing 3813 waters were as follows:

MacConkey and Brilliant Green media agreed in 3,488 samples and there were 325 cases of non-correlation.

25 strains were identified according to Table I as follows:

3 were intermediate type I
7 were intermediate type II
1 was Bact. aerogenes type I
6 were Bact. aerogenes type II
4 were Irregular type II
4 were Irregular type VI.

2 cultures proved to be Cl. welchii (anaerobic gram-positive bacilli producing a stormy clot reaction with litmus milk).

188 cultures gave acid and gas in MacConkey but no gas in the Brilliant Green medium. Of these, 102 were negative and 86 positive indole producers and were, therefore, all classed as 'other coliforms'.

75 cultures gave positive results in MacConkey and Brilliant Green media but negative indole reactions at 44° C and were classed as Irregular Types II and VI (Table II).

TABLE II FROM MACKENZIE ET AL.[8]

Coliform Type	B.G.B.B. Gas 44° C	*Indole 44° C*
Bact. coli Type I	+	+
Irregular Type II	+	−
Irregular Type VI	+	−
Other coliforms	−	+
Other coliforms	−	−

From these results it would appear that, if one accepts the contention of MacKenzie *et al.* that B. coli Type I produces gas in Brilliant Green medium and indole at 44° C, 263 samples (approximately 7%) in this series would have been erroneously classified. According to the Eijkman method of determining the presence of B. coli Type I by the production of acid and gas in MacConkey medium at 44° C, all these samples would have been condemned. Using MacKenzie's classification however, it becomes apparent that the organisms are coliform variants which give a positive Eijkman test.

Conversely, there were 35 samples (approximately 1%) which, although they failed to ferment MacConkey medium at 44° C and were therefore satisfactory according to the older classification, showed gas in Brilliant Green medium at 44° C. Further investigation of these specimens showed that 31 of them produced indole at 44° C and were, therefore, according to MacKenzie *et al.* (Table II), B. coli Type I. The remaining 4 were negative for indole at 44° C and belonged to Irregular types II and VI.

MILK EXAMINATIONS

The routine of incubating cultures of MacConkey liquid medium first at 37° C and subsequently subculturing at 44° C on both media for comparative purposes, were repeated for milk samples. 926 samples were compared with the following results:

In 773 cases the MacConkey liquid and Brilliant Green Bile broth media agreed.

In 153 cases the MacConkey result was positive but the Brilliant Green medium gave a negative result. 50 of these cultures gave a positive and 62 a negative indole reaction at 44° C. All these cultures would be considered as being amongst 'other coliforms' (Table II) (4 of them proved to be Bact. cloacae).

In 41 cases MacConkey and Brilliant Green media were both positive but 'indole' negative. They would be classed as Irregular Types II and VI (Table II).

It will be noted that relatively few cultures were examined according to Table I, primarily because of the time-consuming factor and secondly, in the method of comparison, the result is readily obtainable from Table II.

DISCUSSION

Of a total of 4,741 samples of water and milk examined there was agreement in 4,261 cases when using

MacConkey and Brilliant Green media for determining the presence of Bact. coli type I (typical faecal B. coli). Approximately 10% (480) of the samples would have been reported as being typical B. coli when in reality they were some other member of the B. coli group.

A very small number of the cultures examined proved to be anaerobic lactose-fermenting bacteria (Cl. welchii) although this organism was sought for on all occasions when a larger range of 'sugars' was employed.

Of the strains examined, no Bact. coli Type I failed to ferment Brilliant Green Bile broth at 44° C, whereas approximately 10% of the strains which fermented MacConkey liquid medium at 44° C were not Bact. coli Type I.

35 cultures (±1%) would have been missed as this organism if only the MacConkey liquid medium had been used.

It would appear that a simple and reliable routine method to adopt in the examination of waters and milks for the presence of Bact. coli Type I (typical faecal B. coli) would be preliminary incubation at 37° C of cultures and, when an acid-gas reaction appears, to transfer onto Brilliant Green Bile broth medium and peptone water medium (indole determination) for incubation at 44° C.

The production of gas in the Brilliant Green medium and the presence of indole give rapid identification of Bact. coli Type I.

SUMMARY

An analysis is given of the results in the identification of Bact. coli Type I (faecal B. coli) with MacConkey liquid and Brilliant Green Bile broth media.

The greater accuracy of the Brilliant Green Bile broth medium combined with the production of indole in the rapid identification of Bact. coli Type I in water and milk samples has been confirmed.

We wish to thank the Superintendent of the Routine Department, Dr. J. Murray, for permission to conduct this investigation.

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THE AGRICULTURAL FOUNDATION OF NUTRITION

V — MAIZE

F. W. Fox, D.Sc.

South African Institute for Medical Research

Maize is the basic South African foodstuff, not only because it forms the staple diet of the majority of the non-Europeans and many of the lower income group Europeans, but also because of its extensive use in the production of dairy products, eggs, beef and pork.

Production: From Figures I and III we see that: (i) Production increased over the period 1918-1952 from about 16 to about 28 million bags *per annum*. Over the last 20 years the average annual increase has been 2.1%. (ii) The marked fluctuations in the size of the crop are due mainly to climatic factors, which become more serious as the size of the crop increases. (iii) Europeans grow most of the maize. (iv) Native production in the Reserves has remained at a low and fairly constant level, the annual fluctuations being less marked. The small amount grown by natives on European farms, though included in the total, is not shown separately.

Consumption: This has doubled itself over the last 20 years (Figures II and III). Human consumption rose from about 9 million bags in 1918 to about 16 million in 1952. This would be expected from the increase in population, and it would have been even greater but for the tendency by many Natives to substitute bread for maize. The increase in the amounts fed to animals is particularly striking; this has already reached about 10 million bags *per annum* and is likely to continue to increase. Details of how the crop is actually utilized are given in Table I.

Production outstripped by Consumption: During the last 20 years maize consumption has been increasing at the rate of 3.4% *per annum*, and production by 2.1% (Figure III). The Maize Board points out [1] that export is out of the question except in unusually good years, and, in fact, unless production is considerably increased, maize will actually have to be imported. The estimated requirements in 20 years' time are indeed startling (see Figure IV).

How are these Future Requirements to be met? Any substantial increase in the crop harvested by natives in the Reserves is unlikely, at least in the near future, so that the solution must be found on the European farms. For the last 25 years the area planted by Europeans has ranged between 3 and 4 million *morgen*, and authorities are agreed that there is now little additional land suitable for this purpose. Indeed, some of the marginal areas need to be withdrawn from cultivation if their remaining fertility is to be conserved. In its last report, the Maize Board [2] comments on the 'obvious deterioration in the fertility and water-retaining capacity of the soil that manifests itself over large sections of the maize area.' Hence farmers must increase their production, not by cultivating larger areas, but by improving the yield per *morgen* from land which is already beginning to show signs of exhaustion.

Pilot Research Farms: The answer to this vital nutrition problem has been found, at least in part, on our experimental stations and elsewhere; the difficulty is to translate these findings into general practice. To this end the Maize Board has acquired 4 farms near Ottosdal, Wesselsbron, Senekal and Standerton respectively. Here methods designed to restore and conserve soil fertility as well as to improve yields will be applied as they become available.

Yield per Morgen: The average yield per *morgen* on the European farms remains very low, though between 1918 and 1952 it increased slightly (see Figure V). These national averages are far below those obtained by the better type of maize grower (see Agro-Economic Survey, 1948 [3]), and they may be compared with the yields used in calculating the price to the producer this year, which were 10.75 (Transvaal Highveld), 7.5 (North Western Free State) and 8.2 (Western Transvaal).

In Table II—taken from the last Report by South Africa to the Food and Agriculture Organization (1953) [4]—methods are mentioned whereby these low yields could be improved. 'If these several factors can be combined into sound systems of crop management'—

TABLE I. HOW THE RECORD 1951/2 MAIZE CROP WAS UTILIZED

	1,000 *bags of* 200 *lb.*		
Crop harvested			30,084
Plus 6,159 carried over from 1950/1, less 5,369 carried forward to 1952/3			30,874
		% of crop	
(i) Retained on farms unmilled	3,866	12.5	
(ii) Sold through trade channels as whole maize	5,202	16.9	
(iii) Products manufactured by commercial and gristing millers:			
Sifted granulated meal	5,842	19.2	
Unsifted granulated meal	5,247	17.3	
*Unsifted non-granulated	3,459	11.4	
*Sifted crushed mealies	953	3.1	
Mealie rice	836	2.7	
Germ meal	723	2.4	
Samp	609	2.0	
*Unsifted crushed mealies	448	1.5	
*Hominy chop	385	1.3	
Baker's cones	297	1.0	
*Mealie bran	244	0.8	
*Mealie grits	85		
Mealie flour	29	0.6	
Other	57		
	19,214	62.2	
(iv) Exported	2,235	7.3	
(v) Physical losses during milling, etc.	344	1.1	
	30,874	100.0	30,874

*Fed to animals

TABLE II. EFFECT OF VARIOUS FACTORS ON IMPROVING MAIZE YIELDS (*)

	Percentage Increase in Yields Observed
Improvement of soil structure and fertility	at least 100%
Adequate weed control	„ 100
Pest and disease control	„ 25-50
Control over evaporation	„ 50
Correct espacement, especially in dry areas	„ 50
Improved seed (Hybrid)	„ 30

(*) Based on reports by Research Stations.

TABLE III. MAIZE GROWERS CLASSIFIED ACCORDING TO THEIR SCALE OF OPERATIONS (1951-2)

	European Producers		*Maize Produced*		
Size group (bags)	*Number*	*% of Total*	*Bags (1,000)*	*% of total crop*	
1 — 500	21,236	59.6 } 80.7	4,650	18.3 } 39.8	
501 — 1,000	7,529	21.1 }	5,444	21.5 }	
1,001 — 1,500	2,862	8.0	3,531	13.9	
1,501 — 2,000	1,552	4.3	2,726	10.7	
2,001 — 2,500	859	2.4	1,941	7.6	
2,501 — 3,000	485	1.4	1,337	5.3	
3,001 — 3,500	304	0.9	992	3.9	
3,501 — 4,000	229	0.6	866	3.4	
4,001 — 4,500	126	0.4	536	2.2	
4,501 — 5,000	105	0.3	504	2.0	
Above 5,000	352	1.0	2,852	11.2	
Total	35,639	100.0	25,379	100.0	

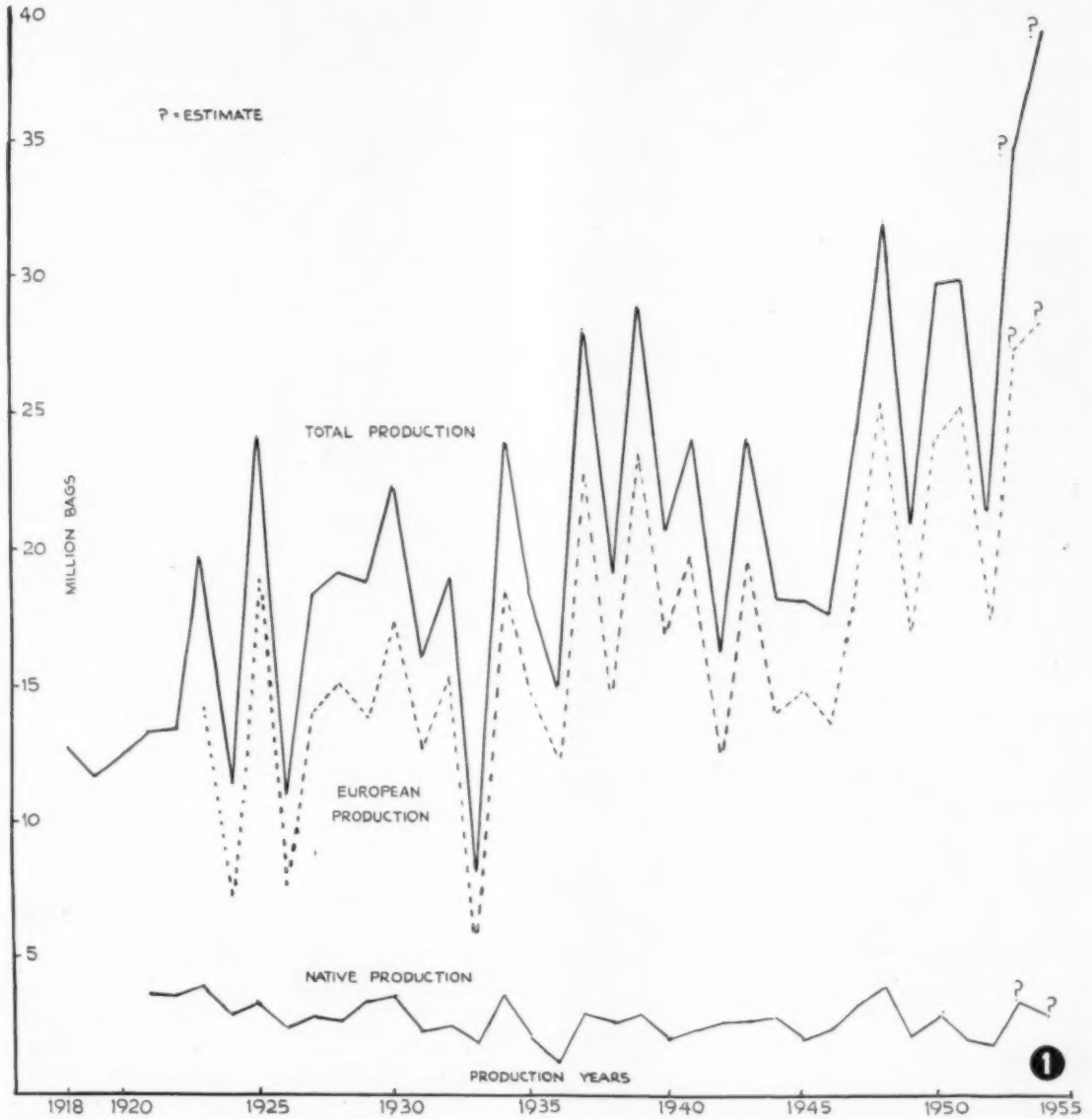
Average size of crop grown = 1,422 bags.

TABLE IV. THE EFFECT OF GOVERNMENT SUBSIDIES ON THE PRICE OF A BAG OF MAIZE (x)

	1948/9	1949/50	1950/51	1951/2	1952/3	1953/4	1954/5
Price received by producer	21/3	21/3	24/–	26/6	30/–	32/–	31/–
Price paid by consumer	20/3	20/3	23/6	25/6	29/–	31/–	30/6
Price to consumer had no subsidies been made (y)	25/9	25/7	28/6	33/3	37/9	37/10	—

(x) Figures have been rounded.

(y) These subsidies are on the cost of handling, storage, railage, bags, etc.



the Report states—'it is not unreasonable to expect a doubling of the maize yield of the Union.'

Hybrid seed: In recent years the superior yields and drought resisting properties of hybrid seed have attracted much attention, and the Maize Board is at present actively engaged in stimulating the production and distribution of such seed. In 1951 Laubscher *et al.*[5] reported upon 713 comparisons made in 10 different localities of the Transvaal Highveld region. These workers found an average yield for standard varieties of 8.6 bags *per morgen*, whilst it was 12.6 for hybrids, an increase of 46%. However, as will be seen from Table II, the use of hybrid seed is no substitute for a higher standard of general technique: yields of 30 or more bags *per morgen* are not infrequently obtained by such means without using hybrid seed, and the main hope for a much greater and more stable maize crop from the average farm lies along these more general lines.

Reserve stocks: The marked fluctuation in annual production was relatively unimportant when the national requirements were lower. Thus during the 28 years from 1918 to 1946, there were only 2 seasons when no maize could be spared for export. Similarly before 1936 the amount carried over to the following season never reached 2 million bags.

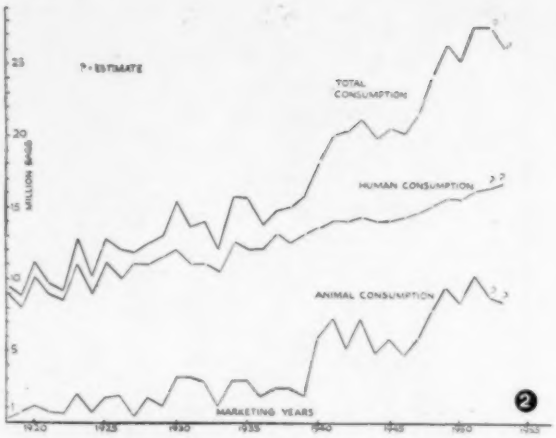
The situation has now become far more precarious and the necessity for maintaining an adequate reserve stock is imperative, particularly since the consumption by animals is increased during drought years. More economical feeding methods are being sought, but it is considered that poor seasons should be guarded against by a carry-over of from 6 to 10 million bags. Perhaps a method could be found of storing this reserve on the farms where it has been grown.

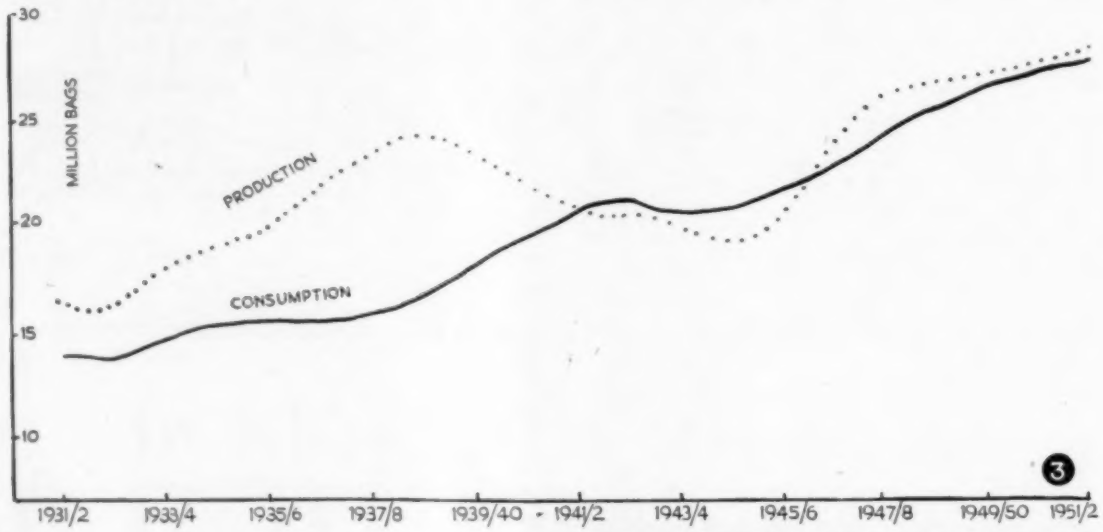
Price: It is commonly believed that the bulk of the crop is produced by a small number of large-scale growers. We see from

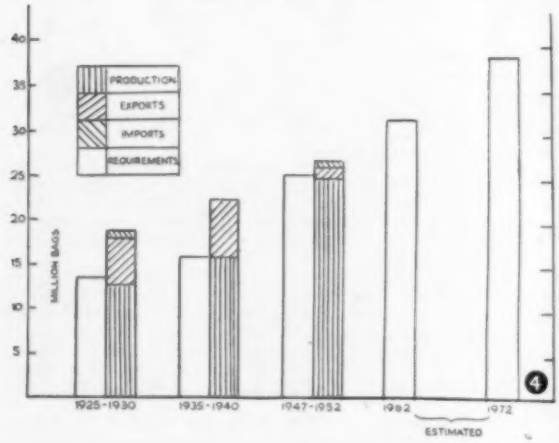
Table III that in 1951-2 no less than 40% of the crop was grown by farmers who produced 1,000 bags or less, and that no less than 80% of all growers fell into this group. If the very marked increase in production now seen to be essential is to be achieved it is clear that the price paid to these smaller growers must be kept sufficiently attractive. This factor has an important bearing on the steady increase in the price of maize to the consumer, noted in Table IV. The extent to which this price is reduced by various subsidies is also shown: the millions of pounds spent each year for this purpose tends to be overlooked.

CONCLUSION

Year by year more maize is needed to feed the human and animal population. At present consumption tends to increase at a faster rate than production. It is estimated that in 20 years' time our annual *requirement* will be almost 40 million bags, i.e. the same amount as the record crop obtained during the present exceptionally favourable year, and the annual production should exceed this to allow for a margin against drought years. This crop can only be grown on a limited area which comprizes about 5% of our European farm land. Much of this land is already showing clear evidence of exhaustion.

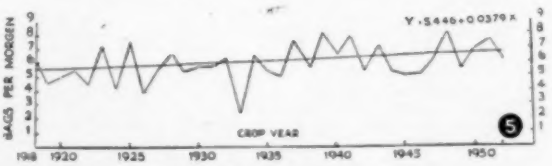






Continuous effort will be required to obtain widespread acceptance for practices known to be capable of increasing the current low average yield *per morgen*.

Thanks are due to the Union Division of Economics and Markets and to the Mealie Industry Control Board for their comments and for supplying recent data.



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ASSOCIATION NEWS : VERENIGINGSNUUS

REPORT OF MEETING OF GRIQUALAND WEST BRANCH HELD IN THE BOARD ROOM, KIMBERLEY HOSPITAL ON 29 APRIL 1954

Dr. J. E. Vaughan Jones was in the chair and 20 members attended.

The meeting took the form of a presentation of clinical cases, all well-described, judging from the discussion which took place from the floor, all of great general interest.

UNUSUAL RENAL CONDITIONS

The first speaker, Dr. Julius H. Kretzmar, demonstrated three interesting X-ray records of Renal Pathology:

(*a*) A case of ureteric stone causing such spasm as to prevent excretion of any urographic medium, which raised the possibility of congenital absence (renal agenesia).

(*b*) A case of nephropexy of an enlarged right kidney with congenital absence of the left kidney—a genuine renal agenesia.

(*c*) A case (the brother of the above) with compensatorily enlarged left kidney and small atrophic right kidney.

Dr. J. Botha presented the case history of Miss B., aged 15, who had complained of intermittent pain and discomfort in the left loin since she was 7 years old, occasional dysuria and occasional colic, no frequency and no nocturia.

She was a well-developed young girl and it was thought that the lower pole of the left kidney could just be tipped on deep inspiration. An intravenus pyelogram showed no gross abnormality of the right renal tract, but there was no function at all on the left. A retrograde pyelogram was then undertaken, and while catherization of both ureters was easily performed, it was very difficult to get any dye into the left ureter. There was a straight line running between the dye in the renal pelvis and that which had spilled over into the ureter, which the radiologist suggested was due to an aberrant renal artery.

At operation a large hydronephrosis was found, the left kidney containing approximately 500 ml. of urine; a very large vessel and small vein crossed the ureter at the pelvi-ureteric junction and entered the remnants of the lower pole of the kidney. The main artery was amall and atrophic, though the renal vein appeared to be normal. As most of the kidney substance was destroyed, nephrectomy was performed. No other pathology was found in the left renal tract.

The patient recovered without complications.

ABDOMINAL CASES

The second half of the evening's proceedings was occupied by a discussion of several interesting abdominal conditions.

The first speaker was Dr. J. D. Visser who described the case of a 30-year-old native male admitted as a case of intestinal obstruction. The history was of the onset of sudden abdominal pain about 15 hours previously, followed by rapid distension of the abdomen and vomiting.

On examination, the abdomen was found to be distended, tympanitic and somewhat painful to pressure. Rectal examination revealed nothing abnormal. While the patient was shocked on admission, he responded rapidly to intravenous Dextraven.

X-ray of the abdomen showed a grossly distended loop of large intestine occupying the left side of the abdomen with some distended loops of small intestine to the right.

A diagnosis of volvulus of the sigmoid was made.

Since passage of a flatus tube through a sigmoidoscope failed to relieve the obstruction laparotomy was performed. Anti-clockwise volvulus of caecum and terminal ileum was found and the involved bowel was gangrenous. This was resected and the cut ends of the ileum and ascending colon brought out after the Mickulicz method.

While the patient was in exceptionally good general condition post-operatively, a paralytic ileus persisted, and on the 5th day the patient suddenly collapsed and died.

The differential diagnosis, incidence and treatment of volvulus of the caecum was then discussed.

Dr. J. Perold described the case of a native female, aged 12 years, with sudden pain in the lower right abdomen followed by several bouts of vomiting and retention of urine. Twelve hours after the onset, there was a slight bloody discharge *per vaginam*. The patient had never previously menstruated.

Examination revealed the patient to be in great pain. Temperature 101° F., pulse 120 per minute, blood pressure 130/75 mm. Hg., mucous membranes suggested a slight degree of anaemia.

The abdomen was grossly distended. No peristalsis was observed. Tenderness and rigidity was generalized, but more so in the right lower quadrant than elsewhere. On percussion dullness in both flanks was elicited, and possibly a fluid thrill. No bowel sounds could be heard on auscultation. Rectal examination revealed moderate tenderness in all areas.

Laparotomy was performed and the peritoneal cavity found to contain bright red blood from a ruptured right ovarian cyst. The cyst measured about 12 inches by 8 inches. It was easily clamped off at the pedicle and removed. Wangensteen suction was instituted after operation, and one pint of blood was given followed by intravenous fluids. Recovery was uneventful, and when seen two months later, she had not again menstruated.

Mr. A. B. de V. Minnaar described the case of a young European male who had suffered direct trauma to the left knee some weeks previously. There had been severe swelling, and some straw-coloured fluid was aspirated. Since the accident, however, the patient was unable to extend the knee fully. Pain remained localized over the medial joint line, and on one occasion something 'popped out' on the antero-medial side, and this was pushed back.

Examination of the left knee revealed no fluid present, but the quadriceps muscles were wasted. Full extension was resisted; there was no instability present, but tenderness over anterior horn of medial meniscus. Manipulation was not possible because of pain.

A diagnosis was made of a peripherally-torn medial meniscus, dislocated into the joint. X-rays revealed an irregularly-calcified mass, which appeared linear and attached anteriorly.

At operation the synovium was found to be very much hypertrophied; one loose body (6d.-size) presented on opening the joint, and further inspection revealed another body (2s.-size) wedged in the intercondylar space; a large area of erosion of the left femoral condyle was present; the medial meniscus was normal; and there was evidence of osteo-arthritic outgrowths on the periphery of the medial femoral and tibial condyles and on the inferior pole of the patella.

The interesting feature of the case was the loose body wedged in the intercondyler space, which presented symptoms not unlike a displaced bucket-handle meniscus.

HENRY SIMPSON PRIZE IN SURGERY

The General Secretary of the Federal Council of the British Medical Association in Australia announces that the Henry Simpson Newland Prize in Surgery, established to commemorate the services of Sir Henry Newland to the medical profession, is open for competition. The Prize—a money award of £100 together with a medal—is to be awarded every three years to the writer of the essay judged to be the best on a surgical subject. The first award will be made in 1955 the subject of the essay being 'The Influence Upon Surgical Practice of Irradation and Endocrine Therapy'. The dissertation should be based on personal observation and experience. The essay, which must not exceed 50,000 words, must be typewritten or printed in English, and it must be distinguished by a motto and accompanied by a sealed envelope containing the name and address of the author and having on its outside the corresponding motto. The competition is open to any graduate of any medical school within the British Commonwealth.

Essays must be delivered not later than 20 May 1955 to the General Secretary, Federal Council of the British Medical Association in Australia, 135 Macquarie St., Sydney.

BOOK REVIEWS - BOEKRESENSIES

GENERAL PRACTICE

Clinical Medicine in General Practice. Edited by John Fry, M.B., B.S., F.R.C.S. (Pp. 436+xi. 27s. 6d.) London: J. & A. Churchill, Limited. 1954.

Contents: 1. What is General Practice? 2. Planning and Organization. 3. A Day in General Practice: Urban and Rural. 4. Children and Their Ailments. 5. Care of the Aged and the Incurable. 6. Diseases of the Upper and Lower Respiratory Tract. 7. The Common Fevers. 8. Digestive Disorders. 9. Cardiovascular Diseases. 10. The Nervous System. 11. Skin Disorders. 12. Rheumatic Disorders. 13. Obstetrics and Gynaecology. 14. Drugs in General Practice. 15. Miscellany. Index.

This is a book for which some of us have impatiently waited: I have read it with pleasure from cover to cover.

Medical students are trained by specialists in various branches of our art in hospitals and in their out-patient departments. Neither during their academic education nor their internship do they come into contact with the problems which most of them will have to face—those of general practice.

This book is valuable in that it gives a clear picture of general practice—its importance, its obligations and its limitations. Its importance lies in the fact that the general practitioner in a properly organized service is 'the only member of the profession to whom every patient has direct access'. He knows the patient in his home, his financial position, the relations between husband, wife and children. He is able to correlate any findings which a specialist may make with his own findings and perhaps those of other specialists, and with him should lie the last word of advice on what procedure the patient should follow; he should sum up the position after considering all the evidence.

The whole book, to which there are 7 contributors (with a foreword by Sir Henry Cohen), is excellently conceived and the conception is excellently carried out. It should be in the hands not only of every newly-qualified practitioner but of every medical student during his clinical years. The man who intends to enter general practice should read and re-read it.

Commencing with a survey of what general practice is, it goes on to inform the would-be practitioner in a number of useful ways about the organization and planning of his practice—accommodation, instruments required, relations with other doctors, the functions of the Medical Council. He is taken on a conducted tour through a day's work in general practice both in town and country.

Thereafter there are excellent chapters on all those ailments with which the general practitioner has to deal in his daily work. Emphasis is rightly laid on the decision when to call in specialist advice and when to send the patient to hospital.

An important change in the scope of domiciliary and consulting-room practice has been brought about by the increasing number of diseases for which remedies have been found which can be administered to the patient at his home or in the surgery—pernicious anaemia, diabetes, pneumonia, boils and carbuncle and cellulitis, syphilis and gonorrhoea, are instances.

It is to be remembered, however, that there are differences between practice in Great Britain and in this country. No doctor in Great Britain is very far from consultant advice and the National Health Service is a fully integrated service—fully available in every department to the *whole* population. One good reason for reading this book would be to discover the deficiencies in our own medical system.

So on one ground or another I recommend perusal of this book to *all* practitioners of medicine, but particularly (and most emphatically) to the newly-qualified practitioner and senior medical student.

F.R.L.

A PHILOSOPHY OF HEALTH

Good Living: A Philosophy of Health. By A. T. Todd, O.B.E., M.B., M.R.C.P. (Pp. 224. 21s.) Bristol: John Wright & Sons, Limited. 1953.

Contents: 1. Introduction. 2. Digestion. 3. Care of the Circulatory System. 4. Exercise and Exercises. 5. Smoking. 6. Care of the Nose. 7. House Cleaning and Health. 8. Sensible Cooking. 9. Care of the Feet. 10. Care of the Teeth. 11. The Eyes. 12. The Skin. 13. Sex in Relation to Health. 14. Care of the Mind. Index.

The table of contents though large, shows but poorly the range of subjects discussed in this book of 224 pages.

The author is philosophic without being in any way heavy, deeply read but an original thinker. Shavian in thought and expression, he frequently quotes G.B.S. with approval; e.g. 'It is not the microbe that makes the disease, but the disease that makes the microbe'.

He quotes, too, from Plato, Epicurus, Kant, Spinoza, Schopenhauer, Descartes, Jung and others, but basically he is anti-Christian, and his arguments monistic, reminding one of Haeckel. Thus we have come, we know not whence. 'Life originated by a fortunate combination of physical and chemical processes, especially solar radiation', and the first unicellular organism being formed the rest was easy! 'Matter', he states, 'is simple energy, *and nothing more*'. But modern science postulates *something more*, viz. that Matter or substance is energy ordered and controlled by Mind, which we may term God.

Of the theories propounded in this book, two are particularly emphasized: Firstly the ill-health that results from 'the cesspool' of the average colon; and secondly the numerous ailments that follow the infection of the ethmoid cells, which may occur in as many as 70% of the population. The cesspool can be cleansed and the stool rendered odourless by regulation of the intake of food in quantity and quality. Fletcher 50 years ago, after rejuvenating himself, claimed that by chewing every mouthful until it was milky the same effect was obtained.

The author tells us that fats remove the fat-soluble vitamins from the body, and generally should not be eaten.

Milk has, for adults, one value only—to combine with tannin in tea. It contains the growth principle which is not needed by adults, and may indeed, stimulate malignant growths. 'Of all the milk products, cheese is the most dangerous'.

He states that 'it is in no way virtuous, but indeed both snobbish and unphysiologic to ablute too often and without need. I curb myself and bathe about twice weekly, and then use little and often no soap'.

It will be seen that Dr. Todd is a forceful thinker and an up-to-date student, stimulating thought and interest even if one does not always agree with him.

A.H.C.

SYNOPSIS OF PAEDIATRICS

Synopsis of Pediatrics. By John Zahorsky, A.B., M.D., F.A.A.P. and T. S. Zahorsky, B.S., M.D. Sixth Edition. (Pp. 470, with 158 text illustrations and 9 colour plates. £3 3s. 9d.) St. Louis: The C.V. Mosby Company. 1953.

Contents: 1. Growth and Development. 2. The Hygiene of Infancy. 3. The Incidence of Diseases. 4. Nutrition. 5. Natural Feeding. 6. Cow's Milk. 7. Artificial Feeding of Infants. 8. Feeding of Children. 9. Feeding the Sick Infant. 10. Diagnosis. 11. Therapeutics. 12. Diseases of the Newborn. 13. Malformations of the newborn. 14. Nutritional Disorders. 15. Deficiency Diseases. 16. Deficiency Diseases (continued). 17. Disorders of Growth. 18. Disorders of Metabolism. 19. Infectious Diseases. 20. The Common Cold. 21. Lobar Pneumonia. 22. Diphtheria. 23. Erysipelas and Scarlet Fever. 24. Measles. 25. Rubella. 26. Variola. 27. Varicella and Pertussis. 28. Cerebrospinal Fever. 29. Infantile Paralysis. 30. Tuberculosis. 31. Syphilis. 32. Rheumatism. 33. Infestations. 34. Allergy. 35. Diseases of the Endocrine Glands. 36. Diseases of the Blood. 34. Allergy. 35. Diseases of the Endocrine Glands. 36 and 37. Diseases of the Blood. 38 to 43. Diseases of the Alimentary Tract. 44 to 48. Diseases of the Respiratory Organs. 49 and 50. Diseases of the Circulatory System. 51 to 53. Diseases of the Genitourinary Organs. 54. and 55. Diseases of the Brain and Meninges. 56 and 57. Diseases of the Nervous System. 58. Disease of the Spinal Cord, Ataxias, Dystrophies. 59. Diseases of the Bones and Joints. 60. Diseases of the Skin. 61. Diseases of the Eyes and Ears. 62. Poisons and Bites. Appendix. Index.

The authors have tried to compress the whole of paediatrics into one volume, having as its basis the teaching of medical students, and in some ways they have been successful.

The chapters on growth and development, and natural and artificial feeding are good. Those dealing with specific systems do not contain sufficient important data even for a synopsis, and much of what is there could be further summarized without detracting from its value. Statements like 'the failure of breast feeding is a calamity' and details about 'the healing powers of human milk' are obviously behind the times.

The chapter on therapeutics emphasizes the value of hypodermoclysis, and allocates 3 figures to it. No mention is made of hyaluronidase. The value of intramuscular injections of whole blood and of serum is emphasized, but the dangers are not mentioned. Digitalis is not regarded as useful in the therapy of paroxysmal auricular tachycardia despite its dramatic effect.

The description of congenital anomalies is not only inadequate, but in several instances misleading. 'Weakness and impaired growth of the lower limbs is suggestive of coarctation of the aorta'. These findings are rarely found in that anomaly. Squatting, one of the most common symptoms of the tetralogy of Fallot, is not even commented upon.

The modern accepted X-ray diagnosis and therapy of Hirschsprung's disease have been omitted and fibro-cystic disease of the pancreas is not mentioned. The space accorded rickets and syphilis could be reduced, and more emphasis given to malignant disease, one of the commonest causes of death in childhood.

The chapter on the therapy of hypertensive encephalopathic attacks in acute nephritis does not include such valuable measures as magnesium sulphate, lumbar puncture, or protoveratrine. Remarks on the treatment of anuria do not stress the importance of fluid restriction and dietary measures to reduce the breakdown of proteins, and the dangers of hyperpotassaemia.

The print is extremely small but the figures and tables are well set out. The scanty information, difficult reading, and poor index make this book inadequate for quick reference.

The author's objective is very admirable, but the book requires a great deal of modernising.

J.L.B.

MATTHIAS VAN GEUNS

Leven en Werken van Matthias van Geuns. Deur Dr. J. H. Sypkens Smit. (Bl. 613 met illustrasies. Fl. 35.) Assen: Van Gorcum & Comp. N.V., 1953.

Inhoud: 1. Algemene Inleiding. 2. Leven. (*a*) Levensloop. (*b*) Persoonlikheid en Karakter. 3. Werken. (*a*) Physiologie. (*b*) Botanie-Chemie. (*c*) Pathologische Anatomie-Chirurgie. (*d*) Verloskunde. (*e*) Interne Geneeskunde. (*f*) Geneeskundige Staatsregeling. 4. Samenvatting. (*a*) Algemeen Overzicht. 5. Bijlagen. 6. Orientatie.

Die Skrywer begin sy inleiding met ‚Dit is een betreurenswaardige feit dat er geen moderne handboek van die geneeskundige geschiedenis in het Koningrijk der Nederlanden bestaat'.

Hierop wil ek net sê dat hierdie boek nie alleen 'n noukeurige lewenskets is nie maar ook 'n breedvoerige uiteensetting van die mediese geskiedenis van die Nederlande gedurende 'n deel van die 17de en 18de eeue.

Dit is merkwaardig dat dit die eerste mediese lewenskets is vandat 'n boek oor die lewe en werk van Boerhoeve, heel moontlik die vernaamste en internasionaal bekendste Nederlandse Medicus, baie jare gelede verskyn het.

Die werk van Van Geuns wat in Leiden begin het en in 1759 in Parys voortgesit is, het 'n breë voorbereiding en 'n diep fondament gehad. Hy het in 1761 in Groningen gepromoveer, en het navorsing gedoen in die Fisiologie, Botanie en Chemie. In 1776 word hy Professor in Harderwyk; in hierdie stad het hy die Hortus uitgebrei van 600 tot 3,000 plante. Later het hy hom gewy aan die Verloskunde, en daar is 'n dramatiese beskrywing van sy eerste geval van 'n Caesarseksie operasie op 'n vrou wat al reeds vier dae in barensnood was. Later, as dosent in die Patologiese Anatomie in Utrecht het hy die verheffing van hierdie onderwerp tot selfstandige vak bepleit; hy het dit hoog geplaas in die geneeskundige wetenskap, en in die onderwys het hy besondere hoë waarde aan die post mortem-ondersoek geheg, en dus meer aandag aan die eindtoestand van die siekeproses as aan die ontstaan en beloop daarvan gewy. Hy het 'n besonder groot aantal publikasies die lig laat sien. Sy mededeling betreffende ‚Teratomata in die pas geborene' met sy eie afbeeldings het groot belangstelling verwek; daar is ook 'n later publikasie, ‚Hernia Thoracica' met afbeelding No. 43 in hierdie boek, deur van Geuns self geteken. Hy het buitengewone gawe gehad wat hom uiters geskik het as 'n medikus, hy was besiel met 'n drang na kennis en was ook 'n goeie seilkundige, as geleerde het hy uitgeblink deur sy helder insig in vraagstukke en sy gesonde oordeel oor wetenskaplike sake.

Ook moet hy beskou word as die vader van die Nederlandse geneeskundige staatreëls, en baie van die maatreëls op higiëniese gebied, en verskeie sosiale verbeterings wat hy aanbeveel het, is in die loop van die 19de en 20ste eeue aanvaar. Aan die einde van die boek is daar 'n ‚verkorte stamboek van die familie van Geuns'—dit begin in die jaar 1463 en loop deur tot die jaar 1880; vir my het dit laat dink aan die dae van my jeug toe ek die stamboek van die konings en koninginne van Engeland moes probeer onthou. Die Skrywer sê dat Van Geuns stellig tot die seuns van Nederland behoort wie se lig onder die koringmaat verberg was, maar in sy lewenskets het hy met baie goeie sukses daarin geslaag om die maat te verwyder.

Die boek is pragtig gedruk en gebind en ek is daarvan oortuig dat dit van groot belang sal wees, nie alleen vir die Afrikaanse medici wat in die Nederlands gestudeer het nie, maar ook vir alle Geneeshere wat belang stel in die mediese geskiedenis.

A.M.M.

BIBLE AND MODERN MEDICINE

The Bible and Modern Medicine. By A. Rendle Short, M.D., F.R.C.S., (Pp. 143. 6s.) London: The Paternoster Press. 1953.

Contents: Preface. 1. Medical Ideas in Primitive Times. 2. Priests and Physicians. 3. The Sanitary Code. 4. Diseases of the Bible. 5. Treatments. 6. Leprosy. 7. Medical Folklore in the Bible. 8. Luke the Physician. 9. The Physical Cause of the Death of Christ. 10. The Miracle of Healing. 11. Demon Possession. 12. Faith Healing. 13. The Biblical Conception of Sickness. Bibliography.

The author of this book is a devoted student of Holy Writ. By his professional knowledge and research, he has brought to light interesting interpretations of many of the diseases and pestilences that afflicted the Israelites in ancient times. For instance, he explains that the 'Emerods' which destroyed many of the Philistines, who put the Ark of God in one of the idol temples, was probably bubonic plague. Wrestling Jacob's injury, he tells us, was probably a ruptured and prolapsed vertebral disc, which pressing upon the sciatic nerve, caused acute pain. Many other diagnoses of illness are given in the chapter of Diseases of the Bible.

On the prevention of disease, he lays much importance on the laws and codes delivered by God to Moses and written in *Leviticus*. Public cleanliness was exhorted, purity of water supply was essential, and isolation of leprosy and infectious diseases was to be practised. Had the Israelites not lived by these codes, the nation would probably have been overwhelmed by the plagues and pestilences that destroyed other nations. Yet, according to the author, these laws and regulations were not practised to avoid disease or infection but because they were Divinely ordained. Spiritual force caused the laws to be obeyed.

The author goes into some detail on the miracles of healing and his observations upon them are interesting and suggestive.

Demon possession, or the invasion by evil spirits, he finds difficult of explanation. The ordinary mind associates this condition with hysteria, epilepsy or insanity. Is it possible to create this condition by hypnotism? The author agrees with some authorities that demon possession is distinct from natural sickness.

Altogether, apart from its interest, the book provokes thought and should be read by Bible students and medical practitioners, and will be of interest to many of the laity.

R.F.

DERMATOLOGIC MEDICATIONS

Dermatologic Medications. By Marguerite Rush Lerner, M.D., and Aaron Bunsen Lerner, M.D., Ph.D. (Pp. 183. $3.50.) Chicago: The Year Book Publishers Inc., 1954.

Contents: Therapeutic Agents. 1. Anhidrotics. 2. Antihistamines and Agents to Combat Sensitivity and Acute Tissue Reactions. 3. Antipruritic Lotions, Liniments, Ointments. 4. Chemotherapeutic Agents. 5. Cleansers and Baths. 6. Covermark. 7. Depigmenting Agent. 8. Enzymic Debridement. 9. Fungicidal and Fungistatic Agents. 10. Gelatin for Finger-Nails. 11. Heat Rash Agents. 12. Heavy Metal Antagonists. 13. Insecticides and Insect Repellents. 14. Ion Exchange Resins. 15. Nitrogen Mustard Therapy. 16. Ointment Bases and Lubricating Agents. 17. Protective Agents Against Water, Oils, Organic Solvents and Sunlight. 18. Rosacea Preparations. 19. Scalp Preparations. 20. Seborrheic Dermatitis Preparations. 21. Sedatives and Hypnotics. 22. Tar Preparations. 23. Ultraviolet Light. 24. Vitamins. 25. Wart Removers, Keratolytics and Caustics. 26. Wet Dressings. *Treatment Regimens.* 27. Acne Vulgaris. 28. Eczematous Dermatitis. 29. Elimination Diets. 30. Chronic Atopic Dermatitis (Disseminated Neurodermatitis) and Lichen Simplex (Localized Neurodermatitis). 31. Psoriasis. 32. Lupus Erythematosus. 33. Statis Ulcer. 34. Punch Biopsy Procedure. References. Index.

This is a practical handbook of medications in current use for dermatological complaints.

There are two sections to the book, the first being on therapeutic agents and the last on treatment regimes. Facts are given in a detached and scientific manner and are well indexed.

The anti-histaminics are not mentioned in detail and the authors stress the limitations of these drugs.

The danger of administration of the wide-spectrum antibiotics is emphasized, including moniliasis of the mucous membranes, but systemic moniliasis, a well-recognised entity, is not mentioned.

Anti-tuberculous drugs are discussed—calciferol, and the INH and PAS, and INH and streptomycin combinations: we are cautioned about the central nervous stimulation from INH and the danger to the kidneys from calciferol, but we are not told of the severe toxi-allergic reactions sometimes seen in patients on INH, streptomycin and PAS.

The indications for ACTH and cortisone (to shorten acute self-limiting dermatoses and to prolong life in otherwise fatal diseases) are made clear and a sound schedule of dosage is given. Oral and parenteral hydrocortone are not discussed but the hydrocortisone acetate ointment (1-2½%) is suggested for refractory pruritic conditions.

Half an inch of space could well be spared on the shelves of dermatologists and general practitioners alike for this very useful little vade mecum.

R.L.

CORRESPONDENCE : BRIEWERUBRIEK

TREATMENT OF THE UMBILICAL CORD IN THE NEW BORN

To the Editor: Dr. Suckling has presented a case for omitting a dressing and binder to the cord in the new born on the grounds that it saves time for the nursing staff.

From his figures it appears that if the cord is sponged daily with methylated spirits, there is no increase in the amount of cord sepsis occurring.

He admits that at present this method is not applicable to domiciliary practice, and therefore the application of this method of treatment to training schools should be approached with caution. If taught in these institutions, the pupil midwives should be made to realize that it is only suitable for institutional use, and be taught the more conservative method of keeping the cord covered for domiciliary work.

This applies most particularly to midwives who are going to work among the poorer and more ignorant Non-European and African patients. Here, in addition to the risk of contamination when the mother has to change napkins herself in circumstances far from hygienic, there is the definite risk of interference in the way of the applications of various poultices to the cord, as soon as the visiting nurse leaves, varying from burned rags to a mixture of spider-webs and mouse dung.

The number of deaths from Tetanus Neonatorum in Cape Town averages two a year, and any measure likely to increase this number would be retrogressive rather than conservative.

Isobel Robertson, M.B., Ch.B., D.P.H.
Deputy Maternal and Child Welfare Officer

Cape Town
City Health Department

DR. TONKIN'S RESIGNATION FROM MEDICAL COUNCIL

To the Editor: Owing to a number of circumstances, I have addressed a letter to the Registrar of the South African Medical and Dental Council which reads as follows:

'It is with regret that I submit my resignation from the South African Medical and Dental Council. In view of my executive position in the Medical Association of South Africa, it would seem inadvisable for me to continue to serve on the Council, and I shall return to you in due course all the documents which I have received from you. I regret also the inconvenience which your Council will be caused in the holding of a by-election, but would thank you and the members of your Council for the courtesy and good fellowship which I have had shown me on all occasions.'

In sending this letter, I feel that I owe an apology to the thousand-odd members who recorded their vote in my favour in the recent election. I would, however, assure them of my desire to continue to serve them within the limits of the work of the Medical Association of South Africa.

A. H. Tonkin

P.O. Box 643
Cape Town
10 May 1954

THE TREATMENT OF HIRSUTIES IN THE FEMALE

To the Editor: In the *Journal* of 8 May 1954 Dr. C. M. Ross of Pretoria commented on a recent article I published on the treatment of hirsuties in the female, and he has set me a few questions. Dr. Ross is a dermatologist and has negatived my remark that little can be done for hirsuties. He states that electrical epilation with the Birtcher Hyfreactor, in expert hands, offers a total and permanent cure.

If Dr. Ross is correct in what he says, then obviously electrical epilation must be the method of choice. However, more than half the patients referred to me had already abandoned electrical epilation because of pain, scarring, the long hours involved, and fear of the method. It may well be that in better hands the results would have been different. As a physician, I have mostly dealt with people in this state, so perhaps it is amongst this group of patients that there may be scope for the method I have suggested.

Dr. Ross complains that my experiments were not controlled. He is wrong there. In a short clinical article such as I had written I did not see the necessity to include graphs and tables etc. showing the details of all results. I expect it to be understood that the experiments *were* controlled. In point of fact, Dr. Ross's questions are already answered in the text of my article.

In the second paragraph of the discussion I wrote 'almost all the patients who had epilated for years before trying the oestrogen preparation stated that epilation alone could never have produced the results achieved after using the oestrogen cream'. As more than half of the 65 patients followed up had epilated for years, and in some cases for 15 to 20 years, I feel that the subject of epilation as such was controlled.

As for the effect of eucerine alone with and without epilation, this also is answered. In arriving at the suggested figure of 8,000 units of oestrogen per gramme of eucerine, it is obvious that there must have been many failures before the correct concentration (in my opinion) was arrived at. This means that many cases treated with what I considered inadequate oestrogen in the cream gave no response.

Surely this was tantamount to using eucerine with epilation without the oestrogen! In addition, 20 of the cases published (31%) were unsuccessfully treated with this preparation. If eucerine were responsible for the results I had obtained, this latter group would not have existed.

The work on this subject extended from 1946 to 1954. More than one ointment base was tried and at no time had it been shown that the base alone had any effect on the hair.

I feel I have satisfactorily answered Dr. Ross's questions. The method I suggested is based on a physiological approach to the problem and it is by this approach that I am sure final success will come.

I. Schrire

1 Hof St.
Cape Town
10 May 1954

COLLEGE OF PHYSICIANS AND SURGEONS

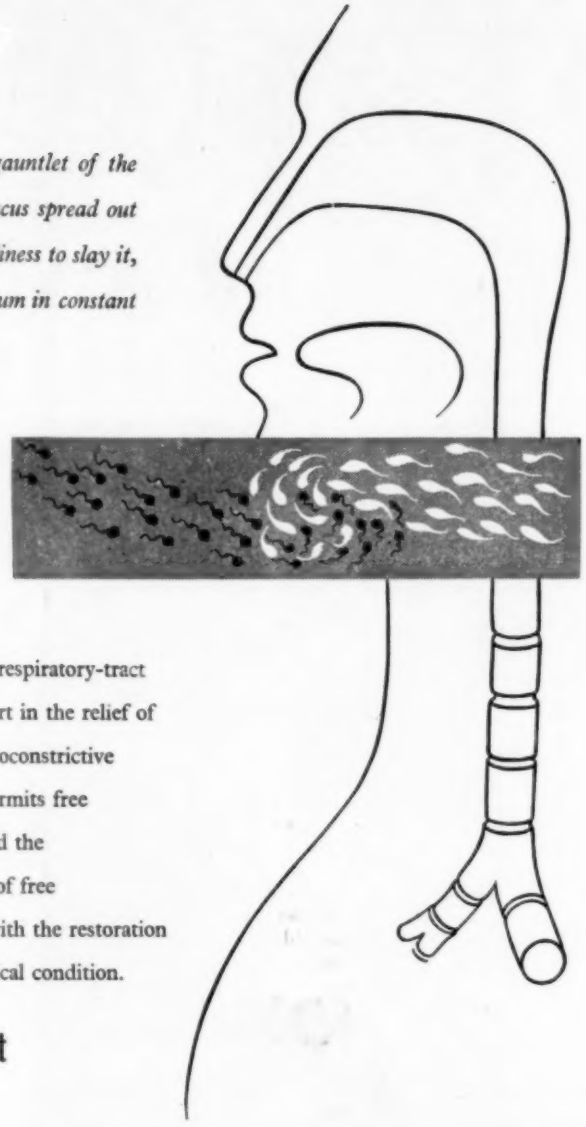
To the Editor: As one of the Junior members of the Profession present throughout the two day inaugural meeting of the College of Physicians and Surgeons in Johannesburg, I was particularly impressed at the magnificent spirit of co-operation throughout the proceedings, and the complete unanimity reached on all major issues without resort to proxy vote.

Now that the whole conception of the college has been altered to the mutual agreement of the founders, it is hoped that many more members of the profession will come forward as Associate founders, on the incorporation of the College under the Companies Act.

A. D. Bensusan

7 St. Paul's Road
Upper Houghton
Johannesburg
5 May 1954

'. . . a germ successfully running the gauntlet of the intricacies of the upper air tract, the mucus spread out for it to adhere to, the phagocytes in readiness to slay it, and the waving armies of ciliated epithelium in constant action to expel it . . .' *



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The Medical Association of South Africa
Die Mediese Vereniging van Suid-Afrika

AGENTSKAP-AFDELING : AGENCY DEPARTMENT

KAAPSTAD : CAPE TOWN

Posbus 643, Telefoon 2-6177 : P.O. Box 643, Telephone 2-6177
Waalstraat 35 35 Wale Street

(1596) Kaapse Middellande, Hospitaaldorp. Goedgevestigde eenmanspraktyk. Totale Bruto Ontvangste: 1952 ± £2,300, 1953 ± £2,430. Prys vir klandisiewaarde, medisyne, meubels en instrumente, £750 of naaste aanbod.
(1457) Goed gevestigde Westelike Provinsie praktyk. Netto inkomste oorskry £3,000 per jaar. Huis beskikbaar. Verband kan gereël word. Volle besonderhede op aanvraag.
(1530) Karoodorp. Eenmanspraktyk sonder opposisie. Gemiddelde inkomste £2,000 p.j. Premie verlang £700. Huis te huur teen £8 p.m. D.S. aanstelling.
(1633) Excellent opportunity to acquire practice and home in very pleasant residential area within 17 miles of Cape Town. Suitable for English or Afrikaans speaking practitioner. Full details on application.
(1655) Cape Town, Southern Suburb. Good branch practice. Income 1953 £1,500. Premium of £750 includes fittings, furniture in rooms. Surgery and 2 waiting rooms available on very satisfactory terms. Definite scope for expansion.
(1653) Noord-Kaapland. Vooruitstrewende woldistrik. Gemiddelde ontvangste per jaar £4,150. D.S. aanstelling. Koopprys £2,000 sluit ook al die geneesmiddels in. GEEN OPPOSISIE NIE. Huis te koop.
(1657) Oostelike Provinsie. Aangename plattelandse hospitaaldorp. Maandelikse inkomste ongeveer £180 p.m. Huis en spreekkamers beskikbaar teen billike huurgeld. Prys £750 sluit goeie voorraad geneesmiddels in. Terme in afbetaling kan gereël word. Goeie geleentheid vir beginner.

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(1427) Natal. Assistant as soon as possible. Salary etc. to be arranged.
(1564) Cape Town suburban practice. Locum/Assistant required. Salary to be arranged also period of service.
(1576) East Griqualand partnership practice. Locum for June and July. Salary offered £3 3s. 0d. p.d. plus all found. Car could be provided, but if own car is used, allowance will be paid. 1st class return rail fare will be paid or equivalent.
(1639) S.W.A. Plaasvervanger vir minstens een maand so gou moontlik. Salaris £3 p.d. en losies, 1s. per myl vir gebruik van eie kar.
(1650) (1668) Cape Town suburb. Locum from ± 18 June for 3 weeks. Own car desirable but not essential. Partnership practice.
(1659) Windhoek, S.W.A. Well established prescribing practice for health reasons. Particulars on application.
(1669) Transkei. Assistant immediately for 3 months. Salary £75 per month plus accommodation and car allowance. Car not essential.
(1668) Cape Town, northern suburbs. In partnership practice from 18 June for 23 days. Salary etc. to be arranged.

* * *

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(LM8) Natal. Locum required from 16 June to 18 July. £2 12s. 6d. per day, all found. Country practice, practically no night work. Drakensberg area.
(LM9) Natal South Coast. Locum required for July. £3 3s. per day, all found. Must have own car. General mixed country practice.

ASSISTANTS REQUIRED

Assistant required, East Griqualand. Definite view to partnership. Old established partnership practice with one partner retiring. Full hospital facilities available. Must be bilingual and preferably with surgical experience. Commencing date 1 July 1954.
(AM2) Assistant required for trial period. If suitable, partnership will be offered. General practice in select area approximately 20 miles from Durban.
(AM3) Assistant required in Transvaal hospital town. Scope for surgery and radiology. Must be bilingual and possess own car. £120 p.m. exclusive board and lodging. Commence June 1954. Excellent possibilities in well established practice.

* * *

JOHANNESBURG

Medical House, 5 Esselen Street, Telephone 44-9134-5, 44-0817
Mediese Huis, Esselenstraat 5, Telefone 44-9134-5, 44-0817

ASSISTANTS/LOCUMS REQUIRED
ASSISTENTE/PLAASVERVANGERS BENODIG

(577) Transvaal. Locum from 5 to 24 July. Partnership practice. £3 3s. per day, all found and car allowance.
(576) O.V.S. Plaasvervanger vir Desember. £2 12s. 6d. tot £3 3s. per dag, alles vry en kartoelae.
(575) Transvaal hospital town. Assistant to start 1 June. Salary £120 p.m. and bonus periodically. Preferably doctor with surgical experience and knowledge of X-ray. Assistant could buy share after a trial period.
(574) O.V.S. Plaasvervanger vir Augustus. £100 p.m. plus vry petrol en olie.
(573) Transvaal hospital town. Junior partner requires locum for 12 months, starting 1 July. Excellent terms.
(571) O.F.S. Locum with view to assistantship. Partnership practice. £100 p.m. and allowances to be discussed.
(569) Transvaal. Assistant to start as soon as possible. View to partnership. Preferably single man.
(568) O.V.S. Plaasvervanger vir Junie. £3 3s. per dag, alles vry en £10 p.m. kartoelae.
(567) Wes-Transvaal. Plaasvervanger vir Julie. £3 3s. per dag, alles vry en 'n kar word verskaf. Min nagwerk.
(561) Wes-Transvaal. Assistent benodig in vennootskap-praktyk. Goeie salaris en toelae om bespreek te word.
(556) Reef town. Assistant required for Reef practice, mainly Non-European. Salary and allowances to be discussed.

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Experienced doctor available for part-time work in Johannesburg. Available 4 afternoons a week, every weekend and most nights.

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(Pr/S122) Johannesburg. Small Non-European practice with income of £120 per month. Scope for expansion, as owner puts in two hours an afternoon, only. Premium £300 and terms will be arranged.
(Pr/S123) Transvaal hospital town. Private practice established more than 20 years ago. Annual income £6,000/£7,000. Principal will consider an assistantship with view to partnership, *or* a partnership *or* an outright sale to two doctors, and will give a very long introduction in the event of outright sale. Details on application.
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(Pr/S125) Uitstekende praktyk in Noord-Vrystaatse hospitaaldorp. Onmiddellike oordrag en introduksie kan gegee word. Jaarlikse inkomste £3,000/£4,000 en die praktyk brei nog steeds uit. Besonderhede op aanvraag.

ASSISTANT WANTED

Bilingual assistant in well established practice in Bloemfontein with view to partnership. Write to 'A.V.E.', P.O. Box 643, Cape Town.

Transvaal Provincial Administration

VACANCIES: TRANSVAAL PUBLIC HOSPITALS

Applications are invited from suitably qualified candidates for the undermentioned posts at Public Hospitals in the Transvaal.

Applications should be addressed to the Medical Superintendents of the undermentioned Hospitals concerned and should contain full particulars as to the age, professional and academic and language qualifications, experience and conjugal status of the applicant and should further indicate the earliest date upon which duties can be assumed. Copies, only, of recent testimonials to be attached.

Cost of Living Allowance payable at present to full-time employees:

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Salary	*Married*	*Single*
Over £350 per annum	£352 per annum	£110 per annum.

Full-time employees receive in addition to their salaries and cost of living allowance, the following privileges:

Leave and rail concession.

Successful candidates will be required to submit satisfactory certificates as also to submit to a medical examination at the hospital concerned.

Application forms are obtainable from any Transvaal Provincial Hospital or the Provincial Secretary, Hospital Services Branch, P.O. Box 2060, Pretoria.

The closing date of applications for undermentioned posts will be 9 June 1954.

Post	*Hospital*	*Emoluments*	*Remarks*
Medical Officer-in-Charge	Standerton	£1,000x50-1,200	Registered Medical Practitioner. Previous Administrative experience a recommendation Plus £180 per annum house allowance.
Part-time Specialist Surgeon	Pietersburg	£912 per annum 4 sessions per week	F.R.C.S. Head of Department.
Ophthalmic Surgeon	Pietersburg	£51 5s. p.a. 4 hours per month	Higher degree in ophthalmology essential.
Casualty Officer	Discoverers Memorial P.O. Florida	£620; £780; £820; £860	Registered Medical Practitioner.
	Krugersdorp	do.	do.
Senior Resident Medical Officer	Klerksdorp	£480 per annum. Plus Board and quarters or an allowance of £120 p.a. in lieu of board and quarters	do.
	Krugersdorp	do.	do.
	Vereeniging	do.	do.
Interns	Klerksdorp	£240 per annum Plus board and quarters or an allowance of £120 p.a. in lieu of board and quarters	
	Krugersdorp	do.	do.

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IMPORTANT NOTICE

Medical practitioners who intend applying for any appointment specified in this notice for which an advertisement appears in this issue of the Journal are advised to communicate first with the Honorary Secretary of the Branch of the Medical Association of South Africa concerned:

Advertisement: **Mines Benefit Society — Two Medical Officers for the Blyvooruitzicht/Doornfontein West Driefontein Areas.**

Branch: **Southern Transvaal Branch, 5, Esselen Street, Johannesburg.**

Industrial Council for the Clothing Industry (Natal) Sick Benefit Fund

FULL-TIME MEDICAL PRACTITIONER

Applications are invited from Registered Medical Practitioners for a full-time appointment with the above Fund which caters for both European and non-European Members.

The fund has its own Clinic where a Registered Nursing Sister is in daily attendance.

Full particulars may be obtained from the undersigned.

P.O. Box 1331 Bruce Brinton
Durban *Secretary*
Telephone 20682

City of Cape Town

VACANCY FOR RESIDENT MEDICAL OFFICER

Applications are invited from registered medical practitioners under 45 years of age for the vacant position of Resident Medical Officer at the Brooklyn Hospital for Chest Diseases.

Salary scale £900x50—£1,150 less £226 per annum for quarters, rations, light, fuel and laundry, plus temporary non-pensionable cost of living allowance.

The successful applicant will be required to devote the whole of his/her time to the service of the Council, and the appointment will be subject to the provisions of Municipal Ordinance No. 19 of 1951, the Standing Orders and Regulations of the Council and the Municipal Staff Code all as amended from time to time.

Applications in duplicate on the prescribed forms obtainable from the *Senior Staff Officer, 2nd Floor, Municipal Buildings, Longmarket Street, Cape Town*, should reach him not later than noon on 12 June, 1954.

Canvassing of Councillors will be a disqualification.

VACANCIES FOR HOUSE PHYSICIANS AND INTERNS

Applications are invited from medical practitioners for the positions of House Physicians and Interns at the City Infectious Diseases Hospital, Brooklyn Hospital for Chest Diseases and Langa Native Hospital. Appointments to the latter two hospitals is recognised by the South African Medical Council as compulsory 'Internship' in terms of the Medical, Dental and Pharmacy Act.

Appointments will endure for a period of six months commencing on 16 July 1954 and the salary will be at the rate of £360 per annum for House Physicians and £240 per annum for Interns, both plus board-residence etc., in respect of the positions at the City Hospital and the Brooklyn Hospital for Chest Diseases. In addition to the above salary a temporary cost-of-living allowance at the statutory rate will be paid.

Applications endorsed 'Medical Appointments', stating age, qualifications, house appointments already held, if any, and other experience, accompanied by copies of not more than three recent testimonials, and addressed to the *Medical Officer of Health*, 12 *Keerom Street, Cape Town*, will be received up to noon on 12 June 1954.

Canvassing of Councillors will be a disqualification.

City Hall M. B. Williams
Cape Town *Town Clerk*

Provincial Administration of the Cape of Good Hope

CARINUS NURSING COLLEGE, CAPE TOWN: LECTURES TO STUDENT NURSES

Applications are invited from registered medical practitioners to lecture to student nurses at the Carinus Nursing College in the following subjects for a period of three years as from 1 July 1954:

Anatomy	25 lectures per course	3 courses per annum
Physiology	25 lectures per course	
Medical Nursing	40 lectures per course	
Surgical Nursing	40 lectures per course	
Ear, Nose and Throat	2 to 8 lectures per course depending on the subject.	3 courses per annum
Ophthalmology	do.	
Orthopaedics	do.	
Pediatrics	do.	
Materia Medica	do.	
Dermatology	do.	
Venereal Diseases	do.	
Urology	do.	
Gynaecology	do.	
Anaesthetics	do.	

Lectures are to be given between the hours 8.30 a.m. and 1 p.m. or 2 p.m. and 4 p.m., each lecture to be of one hour's duration.

Lecturers will be remunerated at the rate of £1 1s. per lecture.

Further particulars are obtainable from the Principal, Carinus Nursing College, 8 Queen Victoria Street, Cape Town.

Applicants must state in what subjects they are prepared to give lectures and whether such lectures can be given in English or Afrikaans or both.

Applications must be addressed to the Principal Carinus Nursing College, 8 Queen Victoria Street, Cape Town, and must reach her not later than 4 June 1954.

(M127138)

Transvaal Education Department

SCHOOL MEDICAL SERVICES

PART-TIME MEDICAL OFFICER FOR MINOR AILMENTS, RANDFONTEIN

Applications are invited for the post of part-time medical practitioner for the examination of minor ailments in School Children at Randfontein. Applicants must be bilingual, Union Citizens, and must be registered with the S.A. Medical Council. The salary attached to the post is paid monthly on the scale of £170 per annum. The successful applicant will do 4 hours' service every week at the Randfontein School Clinic, by arrangement with the Chief Medical Inspector of Schools.

The appointment can be terminated on one month's notice on either side.

No leave is attached to the post and the incumbent must in case of absence provide a suitable locum-tenens.

Applications with full particulars regarding qualifications, age, and experience must reach the Chief Medical Inspector of Schools, P.O. Box 768, Pretoria, not later than 4 June 1954.

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Mines Benefit Society

VACANCIES FOR TWO MEDICAL OFFICERS FOR THE BLYVOORUITZICHT/DOORNFONTEIN/WEST DRIEFONTEIN AREAS

Applications are invited for the appointment of two Medical Officers to the Society. The salary to be paid is £1,000x£50—£1,250 per annum plus a travelling allowance of £27 10s. a month.

For full particulars please apply to the undersigned.

O. W. Johns
General Secretary

P.O. Box 8603
Johannesburg

Provinsiale Administrasie van die Kaap die Goeie Hoop

CARINUS-VERPLEGINGSKOLLEGE, KAAPSTAD: LESINGS VIR LEERLINGVERPLEEGSTERS

Aanoeke word ingewag van geregistreerde geneeshere om lesings aan leerlingverpleegsters aan die Carinus-verplegingskollege oor die volgende vakke te gee vir 'n tydperk van drie jaar, met ingang van 1 Julie 1954:

Anatomie	25 lesings per kursus	3 kursusse per jaar.
Fisiologie	25 lesings per kursus	
Mediese verpleging	40 lesings per kursus	
Chirurgiese verpleging	40 lesings per kursus	
Oor, Neus en Keel	2 tot 8 lesings per kursus na gelang van die besondere vak	3 kursusse per jaar.
Oogkunde	do.	
Ortopedie	do.	
Kindersiektes	do.	
Materia Medica	do.	
Dermatologie	do.	
Veneriese Siektes	do.	
Urologie	do.	
Ginekologie	do.	
Narkoseleer	do.	

Lesings moet gegee word tussen die ure 8.30 vm. en 1 nm. of 2 nm. en 4 nm. Elke lesing moet een uur duur.

Lektore sal besoldig word teen £1 1s. per lesing.

Nadere besonderhede is verkrygbaar by die Prinsipale, Carinus-verplegingskollege, Koningin Victoriastraat 8, Kaapstad.

Applikante moet meld oor watter onderwerpe hulle gereed is om lesings te gee, en of sulke lesings in Engels of Afrikaans of beide tale gegee kan word.

Aansoeke moet aan die Prinsipale, Carinus-verplegingskollege, Koningin Victoriastraat 8, Kaapstad, gerig word en moet haar nie later as 4 Junie 1954 bereik nie. (M127138)

Transvaalse Onderwysdepartement

SKOOLGENEESKUNDIGE DIENSTE

DEELTYDSE GENEESHEER VIR KLEINERE GEBREKE, RANDFONTEIN

Aansoeke word ingewag vir die pos van deeltydse geneesheer vir die ondersoek van kleinere gebreke onder Skoolkinders te Randfontein.

Applikante moet tweetalig wees, Unie-burgers, en by die S.A. Geneeskundige Raad geregistreer wees.

Die salaris aan die pos verbonde word maandeliks op 'n skaal van £170 per jaar betaal.

Die suksesvolle applikant sal elke week 4 uur diens by die Raadfonteinse Skoolkliniek, in oorleg met die Geneeskundige Hoofinspekteur van Skole, moet doen.

Die aanstelling kan met 'n maand kennisgewing aan beide kante beëindig word.

Daar is geen verlof aan die pos verbonde nie, en die bekleër moet in geval van afwesigheid 'n aanneembare plaasvervanger verskaf.

Applikasies met volle besonderhede aangaande kwalifikasies, ouderdom en ervaring moet die Geneeskundige Hoofinspekteur van Skole, Posbus 768, Pretoria nie later as 4 Junie 1954 bereik nie.

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